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# Part First.

## ORIGINAL COMMUNICATIONS.

### Article I.—*Report of Clinical Cases Treated during the Session 1859–60, in the Surgical Wards of the Royal Infirmary, under the care of* James Spence, Esq., F.R.C.S.E., Lecturer on Clinical Surgery.

### PART SECOND.

The former part of this Report comprehended Injuries of the Head, Fractures, and Wounds. The cases remaining to be considered are here grouped as follows:—Tumours, Diseases of Bones and Joints, and Diseases of the Genito-urinary Organs: a few Miscellaneous Cases, and a *resumé* of the principal operations performed during the period, are added.

### Section First.—Tumours.

#### TUMOURS OF SOFT PARTS.

#### *Of Lip.*

1. Robert F——r, æt. 74. Epithelioma of lower lip. Excision. Cured.

2. Thomas A——r, æt. 65. Epithelioma of lower lip, of fourteen years' standing. Excision. Cured.

3. Aitken W——t, æt. 67. Epithelioma of six months' duration, preceded, however, by affection of glands in neck, which are enlarged, and over which the skin is discoloured, tense, and glistening. Operation not advised.

4. Alexr. E——r, æt. 70. Epithelioma of lower lip, of five years' standing. Excision. Cured.

5. George F——y, æt. 55, fisherman. Had an epithelial growth on lower lip removed eight years ago. A similar affection attacked the scrotum extensively, which was removed by Mr Spence two

years ago. He has had no recurrence of disease in these parts. Two months before admission, he felt pain over larynx and difficulty of breathing, accompanied with disturbance of the general health. Poultices had been applied to the neck in front, where a swelling had begun to appear; and, after six weeks, matter made its way to the surface. On admission, patient is very emaciated. Immediately over thyroid gland, an opening as large as a shilling exists, with bright red, irritable edges, disclosing a mass of sloughy tissue, through which air passes during the acts of inspiration and expiration. Slough touched with nitric acid, and poultices applied. As the dead tissue projected, it was removed piece by piece, by forceps and scissors, and it became manifest that it was the thyroid cartilage and the isthmus of the gland. The edges of the ulcer were touched with nitrate of silver, and gradually contracted, so as to prevent the abnormal passage of air. When patient left, a very small opening existed, which is said to have completely closed since. This case has been classed with the foregoing on account of its character.

### *Of Mamma.*

6. Mrs Catherine M——e, æt. 62. Scirrhous mamma. Excision. Cured.

7. Jane B——n, æt. 58. Scirrhous mamma, one year's growth. Excision. Cured.

8. Margaret P——n, æt. 48. Scirrhous mamma. Excision. Cured.

9. Catherine M——l, æt. 50. Small scirrhous tumour of mamma, of twelve years' growth. Excision. Cured.

10. Jane H——n, æt 53. Small scirrhous tumour of mamma, of seven years' standing; retraction and ulceration of nipple; no glandular enlargement. There was also a cystic tumour, the size of a pigeon's egg, on shoulder of same side, which had existed for twelve years. Both excised on the same day. Cured.

11. Fanny L——h, æt. 45. Recurrent scirrhus, with slight glandular enlargement. Patient suffered great pain from the disease, and anxiously desired an operation for the sake of temporary relief. Excision was performed; but pleuro-pneumonia set in on the third day, and proved fatal.

12. Mrs W——n, æt. 52. Medullary-cystic tumour of mamma, of one year's standing. Breast much enlarged; skin thin, discoloured, and adherent at upper and outer part, necessitating removal by elliptical incision directed downwards and outwards. The glands were not affected. Cured.

### *Of Back.*

13. Ronald M——d, æt. 50. Cancroid ulcer, two inches in diameter, over sacrum; present for thirty years. Excision. Bleeding arrested by ligatures and compress. Third day after operation, raw

surface rubbed over with chloride of zinc; poultices, and afterwards water dressing, applied. Cured.

14. John P——n, æt. 48. Fatty tumour on back, of ten years' growth. Excision. Cured.

15. John H——n, æt. 60. Fatty tumour on back. Excision. Cured.

### *Of Extremities.*

16. David G——e, æt. 12. Medullary tumour in groin, of two years' growth. After a time, a smaller swelling of similar character appeared within the abdominal cavity, immediately above Poupart's ligament of same side, so that operative interference became contra-indicated.

17. Margaret M——d, æt. 60. Fourteen years ago, had the right breast removed for disease of two years' standing. Over right clavicle, a fatty tumour, the size of a duck's egg, has existed for nearly twenty years. Four and a half years ago, a soft swelling appeared at the upper and inner side of left groin; it is now the size of a small melon, pendulous, and possessed of a broad base. This latter tumour (also fatty) was removed first, and, after two months' interval, the pectoral one, with an equally good result.

18. James M——d, æt. 40. Large cancroid ulcer over thigh and knee-joint—result of burn. Refused to submit to treatment.

19. James G——n, æt. 55. Cancroid ulcer of leg, of twenty years' duration; tibia nearly destroyed at the lower third by the diseased process; ulcer liable to frequent attacks of copious hæmorrhage, by which patient was rendered very anæmic. Amputation at lower end of femur by long anterior flap of skin. Only one vessel (the femoral) required ligature. Recovered.

20. John C——s, æt. 24. Horny calcosities on heels, cylindrical and truncated, measuring an inch in diameter and half an inch in thickness. Poulticed for a time, then removed by elevator. The secretive papillæ afterwards dressed with Aqua Potassæ and Acetic Acid alternately. Cured.

21. David G——n, æt. 33. Fibrous growth on great toe, of three and a half years' standing. Excision. Cured.

22. Thomas W——n, æt. 14. Vascular tumour of little toe, resembling nævus. Amputation. Recovered.

## TUMOURS OF BONE.

1. James P——n, æt. 32. Cystic tumour of upper jaw. Portion of wall removed. Cured.

2. Alex. M——r, æt. 30. Ditto, ditto.

3. Barbara M——l, æt. 59. Soft cancer of lower jaw, with infiltration of all the neighbouring textures. Died.

4. Janet D——r, æt. 40. Carcinomatous tumour of superior maxilla. Unsuited for interference.

5. John H——r, æt. 12. Chronic abscess of antrum. Removal of part of wall of antrum. Cured.

6. Patrick C——y, æt. 23. Tumour of femur. As patient was perfectly fatuous, and liable to periods of occasional excitement, nothing was done.

*Remarks on the Cases of Tumours.*—I may describe the cases reported under this head as divided into three classes,—Simple, Malignant, and what I would denominate Pseudo-malignant Growths.

The simple growths consisted of fatty, fibrous, erectile, and encysted tumours: the majority of the minor cases not being treated in the Hospital, they do not appear in the Report. It may be noticed here, that, in three cases, fatty or cystic tumours existed in patients who were or had been the subjects of malignant growths—the former having in no way undergone alteration in structure or character. The cases of simple tumour demand no very special notice. The only one which was at all remarkable was that removed from the thigh of the woman M——d (17), which was of great size, somewhat irregular in form, and nodulated. It lay over the course of the vessels, but was quite superficial to them, though adherent at one point to the fascia. This patient had formerly had her breast excised for what, she says, the surgeon stated to be cancer; and at the time of that operation had also another fatty tumour in the neighbourhood of the diseased breast, which the surgeon left, telling her that it was harmless. This growth, it will be noticed, I removed subsequently to that from the thigh.

The forms of malignant tumours which presented themselves for treatment were,—scirrhous and medullary-cystic of the mamma, medullary of the groin and of the upper jaw, and epithelial cancer. The medullary cyst is rather a rare form of mammary tumour. In the case of Mrs W——n (12), it had all its ordinary history of rapid growth, and tendency to involve directly other tissues, before apparently affecting the glands through the lymphatics; and examination of its structure after removal showed that the walls of the cyst were composed of medullary sarcoma. Amongst the cases of epithelioma, that of George F——y (5) serves to prove that this form of disease is not so local as is often stated, but that it is constitutional, just like other forms of cancer. Eight years ago, he had a cancer of the lower lip removed successfully—no return taking place in the lip or neighbouring glands—but the epithelial cancer recurred in the scrotum, of formidable character, requiring the excision of the greater portion of the scrotal integuments, and a part of the right tunica vaginalis which was affected. This operation also proved completely successful as regarded the local growth, but still the constitutional tendency showed itself by the recurrence of a similar disease in the front of the neck. Here, from the depth and nature of the parts affected, excision could not be practised, and the treatment was limited to the use of escharotics; these, aided by the low vitality of the dense texture affected, produced destruction and evolution of the mass in the form of slough; and, except for the small aperture over the trachea, the patient left apparently free from local disease, though, I fear, from the diminishing intervals of recurrence, the prognosis is unfavourable.

The cases of medullary tumour of the thigh and upper jaw were characteristic examples of the rapidity with which that form of malignant growth develops itself, and also of its want of definition or real limitation—conditions which render operative measures so uncertain of accomplishing its complete removal. In the case of the boy G——e (16), although the malignant nature of the tumour was evident, still it was apparently so defined as to encourage me to think of removing it; but, as there was a slight fulness felt in the abdominal parietes, I determined to wait, and in the course of a few days the fulness developed itself into a distinct tumour, of similar character to that in the groin—of course contra-indicating any operation.

The case of G——n (19) stands in some measure in contrast with those last referred to. The warty, ulcerated surface, the destruction of the bone and other textures, the excessive pain, the rapidity of increase which had latterly characterized it, combined with the anxious expression and pale yellow colour of the face, the quick pulse, and general debility, gave all the appearance of advanced malignant disease; and the enlarged glands in the groin seemed to contra-indicate amputation. But experience in similar cases led me to have no hesitation in operating, because the history of the case, as regarded the original character of the ulcer and its slow progress, satisfied me that it was merely a local cancroid, or pseudo-malignant sore, supervening on a chronic ulcer and involving the periosteum—the debilitated condition of the patient arising from the long-continued discharge and pain, and the enlarged inguinal glands being the result of simple irritation. Accordingly, when the limb was removed, the swelling of the glands rapidly disappeared, the man made an excellent recovery, and lost all appearance of the malignant cachexia.

## NECROSIS.

### *Of Lower Jaw.*

1. Mary S——e, æt. 5. Necrosis of great part of lower jaw; sequestrum quite loose; removal. Cured.

2. Fred. K——x, æt. 24. Necrosis of lower jaw, depending on the presence of two carious teeth. After extraction of teeth, two small pieces of bone came away through the gum.

### *Of Humerus.*

3. William B——y, æt. 35. Necrosis of upper part of humerus, following gunshot wound received during Crimean war.

Seventeen pieces of bone had been removed at Haslar; still the sinuses did not heal. A dense piece of the shaft, half an inch in length and breadth, was now removed. Cured.

4. Alex. M——l, æt. 19. Acute necrosis of humerus, extending close up to joint, and accompanied with an exceedingly small amount of substitute bone; large sequestrum removed. Cured.

### *Of Radius.*

5 Eliz. S——n, æt. 13. Necrosis of radius, at first simulating phlegmonous erysipelas in its symptoms; large sequestrum removed. Cured.

### *Of Bones of Hand.*

6. Eliz. B——n, æt. 19. Necrosis of metacarpal bone from injury; healed without apparent exfoliation.

7. Alex. D——n, æt. 38. Necrosis of phalanges of thumb, resulting from injury; amputation was followed by pyæmia. Died.

8. Alex. F——n, æt. 75. Necrosis of phalanges of thumb, in consequence of neglected paronychia; amputation. Cured.

9. Agnes W——n. Same as last; amputation. Cured.

10. William M——e, æt. 22. Necrosis of finger; amputation. Cured.

### *Of Femur.*

11. Alex. K——d, æt. 34. Necrosis of lower end of femur, and abscess in knee-joint; amputation by long anterior flap. Cured.

12. William L——t, æt. 10. Necrosis of lower part of femur, which took many months to separate; sequestrum removed. Cured.

13. Margaret S——d, æt. 13. Necrosis at lower end of femur, of two years' standing, close to and implicating joint. Amputation by modification of Teale's method. Cured.

14. D. G——h, æt. 12. Necrosis of femur near condyles. A large exfoliation removed. Cured.

15. M. P——r, æt. 6. Acute necrosis of shaft of femur. Patient was taken home before bone was loosened.

### *Of Tibia.*

16. Thomas S——w. Small exfoliation from tibia. Cured.

17. John B——e, æt. 13. Acute necrosis of tibia, from which he had nearly recovered, when the leg was seized with erysipelas. Abscesses formed, and the knee-joint came at length to be distended with pus. Irritative fever now merged into hectic; and the limb was amputated through middle of thigh, by flaps of skin. Cured.

18. James H——p, æt. 15. Had acute necrosis of tibia in 1858.

Several portions removed, and limb nearly cicatrized when he left the hospital; now perfectly recovered.

19. John R——e, æt. 19. Necrosis of upper part of tibia, following injury. Two pieces removed. Cured.

20. Neil W——e, æt. 10. Necrosis of tibia. Two sequestra removed, and limb laid on leather splint. Cured.

## CARIES.

### *Of Vertebræ.*

1. Donald M——d, æt. 14. Spinal curvature, with enormous collections of matter in groins and nates. Rest; actual cautery, and prone couch for a time; the abscesses were not opened. Sent home, with general health improved.

2. James R——e, æt. 15. Manifested all the symptoms peculiar to disease in the higher vertebræ. Was much relieved by blisters, actual cautery, rest, and good diet. Afterwards used a leather stock.

3. Alex. W——s, æt. 9. A recent case of Potts' curvature, treated as above. An abscess formed over projecting spine, and was opened from the ulcerated surface caused by cautery. A spinous process and part of a vertebral lamina separated. Convalescent.

4. James C——m, æt. 60. Caries of sacrum. Dismissed *in statu quo.*

### *Of Bones of Extremities.*

5. Alison B——r, æt. 18. Caries of metacarpal bone. Amputation of bone and attached finger. Cured.

6. Angus C——n, æt. 39. Caries of trochanter. Relieved.

7. William F——r, æt. 45. Caries of both patellæ, caused by sleeping all night before a furnace fire. Relieved.

8. John M——e, æt. 24. Ribs and os calcis carious. Free vent given to pus: good diet; Tinct. Mur. Ferri. Relieved.

9. David S——e, æt. 15. Caries of os calcis. Rest; afterwards blister. Relieved.

10. John H——n, æt. 12. Caries of first metatarsal bone. Amputation. Cured. Patient had also a small sequestrum removed from fibula of same leg.

## SECTION SECOND.—DISEASES OF JOINTS.

### *Hip-Joint.*

1. James M——l, æt. 40. Chronic rheumatic inflammation. Corrigan's cautery; rest; Iod. Potass. Cured.

2. Agnes W——n. Synovitis following blow. Rest and fomentations effected a cure.

3. John W——e, æt. 24. Morbus coxæ of 12 months' standing. Actual cautery and long splint. Relieved.

4. Margaret H——s. Chronic rheumatic synovitis. Corrigan's cautery; rest; Iod. Potass. Cured.

5. Mary M——e, æt. 16. Morbus coxæ. Cautery and long splint. Cured.

### *Knee-Joint.*

6. Jane L——r, æt. 21. Loose fibrous bodies in knee-joint, giving rise to pain and weakness. Bandages with Emp. Saponis around joint; rest in wire splint, with blister, and afterwards actual cautery. Slight improvement.

7. Mary D——e, æt. 26. Suffered from disease of knee-joint for 15 years, unfitting her for any employment. On admission, joint enlarged; heads of tibia and fibula swollen and painful; numerous nodular bodies, moveable, but attached to synovial membrane. After much palliative treatment, the joint was excised, and the limb placed on Fergusson's splint. Patient sank under pyæmia on sixth day.

8. Henry S——e, æt. 7. Contraction of knee-joint, with partial anchylosis of patella to femur—the result of chronic synovitis. Hamstring tendons divided, and limb straightened on a wire splint. Improved.

9. Ann W——t, æt. 29. Acute synovitis, following long-standing inflammation of joint. Rest on splint; fomentations; Scott's plaster. Cured.

10. John R——e, æt. 23. Bruise of joint between railway buffers. When brought to hospital, patient was labouring under double pneumonia. He died on the fifth day.

11. Joseph C——g, æt. 14. Ulceration of cartilages. Resisted palliative means; amputation at lower third of thigh by Teale's method. Recovered.

12. James F——y, æt. 24. Loose fibrous body in joint. Treated with palliatives, *e.g.*, rest and bandages.

13. Miles S——h, æt. 28. Ulceration of cartilages, going on to the formation of abscesses in joint. Refused to submit to amputation.

14. Saunders J——n, æt. 20. Synovial degeneration of five years' standing, ending in ulceration of cartilages and abscess. Amputation at lower third of thigh by long anterior flap. Recovered.

15. William M——t, æt. 22. Acute synovitis after blow. Rest; fomentations; use of wire splint; iodine; and bandages. Cured.

16. Ann M——n. Synovial degeneration, with ulceration of cartilages. Rest in splint; fomentations; Scott's plaster. Partial anchylosis took place. Cured.

17. William C——s, æt. 9. Ulceration of cartilages. Amputation at middle of thigh by long anterior flap; necrosis of end of bone. Cured.

### *Ankle-Joint and Tarsus.*

18. John V——e, æt. 22. Gelatinous disease of ankle. Amputation; slow cicatrization in consequence of phthisical state of lungs. Dismissed convalescent.

19. John H——e, æt. 9. Caries of os calcis and lower end of fibula. Amputation at ankle-joint by large internal flap. Recovered.

20. Mary K——r, æt. 8. Disease of ankle. Amputation. Recovered.

21. William D——k, æt. 13. Caries of tarsus. Amputation. Recovered.

22. Robert F——n, æt. 14. Caries of tarsus. Amputation. Recovered.

23. Peter S——y, æt. 9. Caries of tarsus, the result of a blow. Patient of strumous diathesis. Amputation at ankle. Recovered.

### *Shoulder-Joint.*

24. Mary M——y, æt. 35. Synovitis following blow. Fomentations; blister. Cured.

25. Sarah O——n, æt. 16. Omalgia. Cautery. Cured.

There were many others of similar character.

### *Elbow-Joint.*

26. John M——r, æt. 18. Ulceration of cartilages. Actual cautery. Relieved.

27. Andrew H——n, æt. 17. Anchylosis of elbow, following extensive necrosis of humerus. Excision. Recovered.

28. William M——d, æt. 26. Synovitis of joint, with syphilitic taint. Fomentations and Iodine externally; Potass. Iod. with Sol. Arsen. internally. Cured.

29. Margaret N——n, æt. 14. Suffered a wound of bursa over olecranon, which was followed by suppuration extending into the joint. Excision. Recovered.

30. James G——w, æt. 8. Synovial disease of joint, with ulceration and abscesses. Excision. Convalescent.

### *Carpus.*

31. John W——t, æt. 12. Disease of carpus of several years' standing, with abscesses and ulceration around wrist. Limb laid on splint, and sores dressed with weak stimulating lotions. Internally, Ol. Morrhuæ, Tinct. Ferri Mur. Improved.

32. James S——e, æt. 8. Same as above. Patient's health began to suffer; but his friends would not allow operative measures, and removed him. He died exhausted some weeks afterwards.

### *Dislocations.*

James B——d. Dislocation of hip upwards and backwards. Treated in the country for a fortnight with leeches and blisters; reduced by pulleys while patient was under chloroform.

Of the shoulder and elbow, many cases presented themselves, but were very rarely retained in the hospital.

*Remarks on the Cases of Disease of Bones and Joints.*—These formed, as usual, a very large proportion of the cases treated, but unfortunately they are of too common occurrence to present much room for remark. Amongst the cases of necrosis there will be found several in which, by careful and patient treatment, and the performance of resection for the extraction of sequestra, the patients were dismissed cured, with useful limbs. And in those where amputation was performed, it was only resorted to when, from neighbouring joints becoming affected, and the patient sinking from hectic, the operation was rendered imperative. Two of the most gratifying cases were those of the boys M——l (4) and H——p (18). In the former, the upper part of the humerus had been attacked with acute necrosis, and there seemed cause to fear that the shoulder-joint was implicated, whilst he was much exhausted from the disease; but by waiting, and supporting his general health, he gradually improved. Some substitute bone formed, and I determined to try resection instead of amputation, unless I found a very large amount of the shaft bare. With this view I made a very free longitudinal incision, and was happy to find that the upper part of the shaft had separated, leaving the epiphysis healthy; then, by splitting up the necrosed portion of the shaft, I was enabled to remove, with very little loss of substitute bone, a dead portion, about two inches long and of the whole circumference of the shaft, immediately below the head of the humerus. The boy made a good recovery with a perfectly useful arm.

In H——'s case, the disease was of long duration. Sequestra had been removed at various times from different parts of the tibia, and one near the ankle-joint now gave rise to great irritation, and threatened to involve that articulation. It was deeply imbedded, and so imprisoned by the substitute bone as to be immoveable. To reach and remove it, I had to take away, partly with the trephine and partly with small saw and bone pliers, a dense ivory-like bone an inch and a half in thickness; but after the extraction all irritation ceased, and the lad is now quite well and can walk long distances. Another boy, B——e (17), who was in the same ward, was not so fortunate. He had suffered from acute necrosis,—large sequestra had separated and been removed, and the wound had all but healed; when, on the eve of his dismissal as cured, he was seized with an erysipeloid affection of the leg and thigh, accompanied by great general fever and sore throat, his tongue also presenting all the appearance of a case of scarlet fever. As the redness of the leg disappeared, the knee-joint became affected, the urine was highly albuminous, the soreness of the throat increased in severity, and vomiting occurred. These conditions did afterwards somewhat ameliorate, but the knee-joint suppurated and gave rise to excruciating agony. Under these unfavourable conditions, as soon as he could take and retain some nourishment, I amputated the thigh at the middle third, and, strange to say, he made one of the most rapid recoveries I almost ever saw, after the amputation.

The patients suffering from affections of the joints who come under treatment in hospital, seldom apply until the disease has made such progress as not to give a fair chance to curative measures; yet, even with this disadvantage, those who leave cured or relieved are far more numerous than those who are subjected to operation. The fact is, that the cases operated on by excision or amputation attract more attention and interest than those which are cured, and hence exaggerated notions are entertained as to the proportion of operations in this class of diseases. It is unfortunately too true, that amongst hospital patients diseases of joints which have been relieved or completely cured at one time, recur, and necessitate operative measures; but this is due to the circumstances and habits of such patients. In the first place, they are not very tolerant of the restraint and prolonged treatment necessary for a thorough cure, but are desirous to leave when the more urgent symptoms are relieved; and when they return to their homes, the necessity for labour, involving the use of the affected limb, the want of nutritious diet, and exposure to cold and other exciting causes, reproduce and aggravate the disease.

Amongst the cases recorded where operation was had recourse to, it will be noticed that there was only one of excision of the knee-joint. The reason why amputation of the thigh was resorted to in the other cases of diseased knee-joint, was owing to the nature and extent of the disease in some, and in others to the youth of the patient; for I have long felt satisfied of what is now beginning to be admitted after time has proved it, that the limb after resection in young patients is not so fully developed as to be ultimately useful.

## SECTION THIRD.—DISEASES OF GENITO-URINARY ORGANS.

### *Stricture of Urethra.*

John C——e, æt. 44. Stricture of urethra, with an abscess in perineum, which had discharged itself by a small opening a few days before admission. Opening freely enlarged. Cured by dilatation.

Robert C——n, æt. 72. Stricture of 30 years' standing, complicated with perineal abscess and enlarged prostate; abscess had opened into urethra. Perineum incised from without; and at the same time the stricture situated about an inch anterior to the bulb was divided. Cured.

John F——e, æt. 57, for last two years suffered from stricture. On admission, it was found to be complicated with perineal abscess, which was opened at once. A week afterwards, the stricture was divided, and a No. 8 catheter tied in for 24 hours, which, on being withdrawn, was replaced by a gum-elastic catheter for the same length of time. On the third day there was a little irritation around wound; ordered a poultice. In the course of the day he had a rigor, and next morning some varicose veins in the left leg became inflamed, and abscesses formed. This was followed by abdominal and thoracic pains, severe headache, and convulsions and coma, terminating in death. No *post-mortem* allowed.

There were eleven cases of stricture successfully treated by dilatation.

### *Fistula in Perineo.*

John T——s, æt. 40. Fistula in perineo. Incision; and afterwards introduction of heated wire. Cured.

### *Fungous Testicle.*

James D——s, æt. 38. Syphilitic fungous testicle. Poultices to remove sloughs; afterwards closed in by paring edges of scrotal sore, and securing them by silver suture. Cured.

John M——d, æt. 24. Enormous syphilitic fungoid testicle; treated as above. After bleeding; extensive phlegmonous erysipelas attacked the side and back, and he died on the fourth day after the operation.

### *Varicocele.*

James F——y, æt. 26. Varicocele. A large elliptical portion of scrotum, which was very loose and pendulous, was removed, and a natural suspensary thus formed.

### *Vesical Calculus.*

David K——d, æt. 49. Calculus in bladder. Removed by lateral operation. Cured.

James C——d, æt. 12. A stone of considerable size was successfully removed from the bladder.

### *Rupture of the Bladder.*

James C——e, æt. 25. On the 26th May 1860, at 5 A.M., patient fell out of a cart, and, being slightly intoxicated at the time, did not immediately thereafter perceive any unusual sensations. About 7 A.M. he walked into the Surgical Hospital, complaining of pain at the lower part of thorax on both sides, and inability to micturate. No fracture could be detected; and as he objected to the catheter being passed, he was forthwith dismissed. At 4½ P.M., patient returned with increased desire to make water, great pain over hypogastric region, and tenderness over the abdomen generally. No vesical protuberance could be detected; dulness only reached three inches above pubes, but extended across both iliac regions. No. 10 catheter was introduced, and about ℥vi. of bloody urine and clots came away. *Vespere*, 8½. Patient suffered great abdominal pain, with constant desire to micturate. Pelvic dulness slightly increased. ℥lxxx. of bloody urine drawn off by catheter, which seemed to pass through the coats of the bladder. From this period an instrument was passed every six hours; but already the general and local symptoms of peritonitis manifested themselves, and, gradually becoming more intense, the patient sank at 5 A.M. on the 29th, exactly 72 hours after the occurrence of the accident. A *sectio* was not permitted by his friends.

*Remarks.*—The diseases of the Genito-urinary system comprised a large number of stricture cases, two of calculus, etc.

The most interesting case, as bearing upon the diagnosis of different forms of ruptured bladder, was that of the man C——e, which I have detailed in full. I felt little doubt that this was one of those instances of ruptured bladder where the urine escapes freely into the peritoneal cavity, the diagnostic symptoms distinguishing it from cases where the ruptured bladder allows only a small portion of its contents to escape; but, unfortunately, the principal value of the case was lost through the obstinate refusal of the relatives to permit any examination of the body. Still, I give the notes of the case, as taken at the time, as in themselves interesting.

## Section Fourth.—Miscellaneous.

### *Hernia.*

Andrew C——d, æt. 43. Inguinal hernia, strangulated for 24 hours. Operation. Cured.

### *Diseases of Rectum.*

Besides numerous cases of hæmorrhoids and fistula in ano, which were treated in the ordinary manner, there were three examples of cancer, to which palliatives only were applied.

### *Frost-bite.*

Three cases of frost-bite presented themselves during the winter. Poultices of moderate temperature were applied to the gangrenous parts, and the surrounding erythema preserved from irritation by being enveloped in cotton wadding. Patients were at the same time placed upon a nourishing non-stimulating diet.

## OPERATIONS.

### AMPUTATION.

#### 1. *Hip.*

Walter W——, æt. 38. Laceration of thigh by explosion of gunpowder. By large posterior flap. Died.

#### 2. *Thigh.*

Margaret S——, æt. 13. Necrosis. Long anterior flap. Recovered.

Alexander R——, æt. 34. Necrosis. Long anterior flap. Recovered.

John B——, æt. 13. Necrosis, and abscess in knee-joint. Flaps of skin. Recovered.

Joseph C——, æt. 14. Disease of knee. (Teale.) Recovered.

Walter H——, æt. 36. Compound comminuted fracture of leg. Long anterior flap of skin. Died.

Sanders Q——, æt. 23. Disease of knee. Long anterior flap. Recovered.

William C——, æt —. Disease of knee. Long anterior flap. Cured.

James G——. Cancroid ulcer of leg. Long anterior flap. Cured.

J. M——, æt. 3. Disease of knee. Long anterior flap. Cured.

#### 3. *Leg.*

Francis P——, æt. 35. Compound comminuted fracture. Long posterior flap. Recovered.

Duncan C——, æt. 43. Compound comminuted fracture. Long posterior flap. Died.

#### 4. *Ankle.*

John V——, æt. 22. Gelatinous disease. Convalescent.
John H——, æt. 9. Caries. By internal flap. Recovered.
Mary R——, æt. 8. Caries. Recovered.
William D——, æt. 14. Disease of tarsus. Recovered.
Robert F——, æt. 14. Disease of tarsus. Recovered.
Peter S——, æt. 9. Disease of tarsus. Recovered.

The partial amputations of hand and foot amounted in all to 36; but it is not necessary to detail each case.

### EXCISION OF JOINTS.

Andrew H——, æt. 17. Anchylosis of elbow. Cured.
Margaret N——, æt. 14. Disease of elbow. Cured.
—— ——, æt. —. Disease of elbow. Cured.
Mary O'D——, æt. 26. Disease of knee. Died.

### EXCISION OF TUMOURS.

Robert F——, æt. 74. Epithelioma of lip. Cured.

Thomas A——, æt. 65. Epithelioma of lip. Cured.

Ronald M'D——, æt. 50. Cancroid growth over sacrum. Cured.

David G——, æt. 33. Fibrous tumour of great toe. Cured.

Margaret M'D——, æt. 60. Fatty tumour in groin, and also another over clavicle. Both excised. Cured.

John H——, æt. 60. Fatty tumour on back. Cured.

John P——, æt. 48. Fatty tumour on back. Cured.

Alexander E——, æt. 70. Epithelioma of lip. Cured.

Thomas W——, æt. 14. Vascular tumour of toe. Amputation. Cured.

### EXCISION OF MAMMA.

Catherine M——, æt. 62. Scirrhous mamma. Excision. Cured.

Jane B——, æt. 58. Scirrhous mamma. Excision. Cured.

Margaret P——, æt. 48. Scirrhous mamma. Excision. Cured.

Jane H——, æt. 53. Scirrhous mamma, with small cystic tumour on shoulder. Excision. Cured.

Fanny L——, æt. 45. Recurrent scirrhous mamma. Excision. Pleuro-pneumonia. Died.

Catherine M'N——, æt. 50. Scirrhous mamma. Excision. Cured.

Mrs W——, æt. 54. Tumour of mamma. Excision. Cured.

### HERNIA.

Andrew C——, æt. 43. Inguinal hernia. Cured.

### LIGATURE OF ARTERIES.

A child, æt. 2. Wound of radial. Cured.

George L——. Wound of radial and superficial volar. Cured.

### LITHOTOMY.

David R——, æt. 49. Lateral operation. Cured.

—— C——, æt. 12. Lateral operation. Cured.

### PERINEAL SECTION.

Robert C——, æt. 72. Cured.

John F——, æt. 57. Pyæmia. Died.

### TREPAN.

Christina S——, æt. 36. Compression following wound of scalp, with necrosis. Recovered.

*Remarks on the Operations—Amputations.*—The cases of amputation were, in all, 18—viz., 1 at the hip-joint, 9 of the thigh, 2 of the leg, and 6 at the ankle. The case of the amputation at the hip has already been noticed under the head of Wounds; and I would only remark here, that the plan of operation by a posterior and external flap was not matter of choice, but from the necessity of taking the flap from the parts which had escaped injury. Of the nine amputations of the thigh, there was only one fatal result, and that in a case of primary amputation for railway injury, in which pyæmia set in at a late period. In all the remaining cases, the results, both as regarded the healing of the wound and the form of the stumps, were most satisfactory. In all cases where it could be adopted, I amputated by the plan of a long anterior flap—the modification of Teale's method, to which I drew attention in my Clinical Report of last year, and of which further experience confirms my favourable anticipations. It is both simpler in performance, the flap more readily adjusted and retained, and the form of stump at least equal to that formed by the very long square flap folded on itself, as recommended by Teale. In some cases, however, as in that of the boy B——, or in cases of primary amputations for injury, the state of the soft parts renders it necessary to adopt other methods, so as to amputate as low in the thigh as possible; and then I generally prefer flaps of skin, leaving only a moderate amount of muscular tissue round the bone.

The amputations below the knee present a very unfavourable average; but this depends, I think, on the fact that they are almost always primary—the ankle-joint operation having superseded this amputation in a very large proportion of the cases in which it used to be performed for disease of the foot and ankle. In the fatal case mentioned in the Report, the man's health was impaired by his previous habits. He had lost a large quantity of blood before he was discovered, and had been lying exposed in a cold and wet night, besides having received other injuries; so that the prognosis was by no means favourable, although the operation was imperative, as affording the only chance for life.

The amputations at the ankle-joint do not call for remark. They presented the usual successful results, both as regards the formation of good stumps and safety to life; and my own experience of this amputation, whether performed by Mr Syme's method or the large internal flap, leads me to consider it the most satisfactory of all amputations.

Amongst the cases of excision of the joints, there was only one of excision of the knee-joint, and it terminated in the death of the patient. The case was that of the girl D——, mentioned under Diseases of Joints. The disease which led to the operation was ulceration of the cartilages and the subjacent osseous surfaces, resulting from fimbriated disease of the synovial membrane. She had suffered from the disease for several years; and, as the floating bodies became larger and more numerous, the pain had become very severe, and she had for some time been unable to use the limb so as to follow her ordinary avocations. When she had been under treatment for some weeks, it became evident from the symptoms —the pain on pressing over the head of the tibia, and the excessive pain and starting of the limb at night—that acute ulceration of the cartilages and articular surfaces of the bones had taken place. I accordingly performed excision. The operation was easily executed; comparatively thin sections of the tibia and femoral condyles required to be removed; the altered synovial membrane, with numerous groups of pedunculated masses, were dissected off; there was little bleeding, and very few vessels required to be tied. The wound was dressed and adjusted in the usual way, and everything seemed to promise fair for a successful issue; but she was restless and depressed from the first. Symptoms of acute pyæmia set in, and the patient died eight days after the operation. It appears difficult to account for the unfortunate result in a case where the disease seemed so local, and where the general health had only suffered for a short time, except on the view that the peculiar affection of the synovial membrane is one where operations are unusually dangerous; and certainly, when we consider how frequently disastrous results follow even the slightest and most carefully conducted operations in cases of loose cartilages, there does seem reason to think that there must be some peculiarity connected with it which leads to the development of unfavourable results.

The principal operations on the urinary organs were two for lithotomy, and two of perineal section for stricture of the urethra.

In both the cases of lithotomy the lateral operation was performed under chloroform with success. In the case of the man K——, two calculi were removed. In the boy C——'s case the stone was very large in proportion to the space through which it had to be extracted, yet he never had a bad symptom after the operation.

Of the two cases of perineal section, one had a fatal termination. The patient had a very bad, irritable stricture, which had been repeatedly dilated and had again returned, and he now suffered great irritation whenever an instrument was passed. He was of dissipated habits, and had long suffered from varicose veins. The operation was easily performed, with almost no bleeding; and a No. 9 silver catheter was introduced, which was changed for a gum catheter at the end of twenty-four hours, the latter instrument being withdrawn at the end of forty-eight hours. The urine flowed freely, principally by the wound, but partly by the urethra; and he never had any pain or uneasiness there, nor in the abdomen; but on the eighth day he had a rigor, and the next day complained of pain in his leg, which was found to be erythematous, the varicose veins being extremely painful to the touch. The inflammation of the veins extended, and he ultimately died with all the symptoms of pyæmia. How far this condition was the result of the perineal section I leave others to judge; I can only say that, as regards the irritation of the parts operated on, he never suffered more, if so much, as he had often done after the introduction of a catheter. The successful case stands in strong contrast to the one just related, whether considered in reference to the unfavourable conditions under which it was performed, or the advanced age and previous exhaustion of the patient. I was summoned to see him at the house where he lodged; and, from the statement made to me, I supposed it was a case of retention from enlarged prostate. I found him straining violently to pass water, which he voided drop by drop. On examining the prostate per anum, I felt it greatly enlarged; but when he saw the prostate catheter, he told me that he had suffered from stricture for more than thirty years, and that latterly no larger instrument than a No. 2 could ever be passed, and that it had not been passed for more than a year. On examining the perineum, I found it hard, and somewhat swollen and red; the urethra, immediately anterior to the bulb, felt firm and cartilaginous; and at this point the large catheter was arrested. As I had no small instruments with me, I had him brought to the Hospital, and after some considerable difficulty succeeded in passing the smallest grooved stricture staff, and performed the perineal section, making the incision longer than usual, to afford free vent to the pus which had begun to form. An ordinary No. 9 silver catheter then readily passed through the strictured part; but, owing to the enlarged prostate, I could not lodge it in the bladder, and, accordingly, I had to withdraw it, and substitute a large gum-elastic catheter, which entered readily, and evacuated a large quantity of fœtid urine. Notwithstanding the age of the patient (72), his worn-out constitution, and the complications of the case, he made an excellent recovery, and continued to pass his urine in a full stream.

As regards this operation in general, after having performed it very frequently, I feel quite satisfied that, if the constitution has not been too much undermined, and if there be no great amount of organic disease of the kidney, it is attended with but little danger, and is by far the most satisfactory method of treating indurated, irritable, and resilient strictures.

I cannot conclude without acknowledging my obligations to my late Resident-Surgeon, Dr Maclaren, for the care and labour bestowed in preparing the synoptical part of this Report.

## ARTICLE II.—*Description of Two Cases of Exomphalos, with Observations on Fœtal Malformations.* By THOMAS A. G. BALFOUR, M.D., Edinburgh.

(*Communicated to the Edinburgh Obstetrical Society, on 22d February* 1860.)

THE present case is essentially one of extroversion of the abdominal viscera through an unclosed portion of the anterior abdominal walls; and, like all such cases, it exhibits various other abnormalities. The history of the case is soon given. On February 21st, 1860, I was called, about 5 P.M., to attend Mrs S., æt. 19, who was being confined of her first child. On arriving at her house, I found, on examination, the os uteri fully dilated, the bag of membranes filling the vagina, and a foot presenting. On rupturing the membranes, a very large amount of liquor amnii escaped, and the child descended to near the ostium vaginæ. On introducing my hand along the anterior portion of the abdomen, I discovered a number of folds, which felt not unlike coils of the umbilical cord. Fearing lest the longitudinal stretching of the cord (which would naturally result from this supposed condition) would tend to stop the circulation in it, I hastened the delivery as far as consistent with due caution: and now the real nature of the case was apparent; the fancied coils of cord proved to be these folds of intestines, which, together with the liver and stomach, are seen protruding. The delivery was over in about half an hour after my arrival; the whole duration of labour having been about twenty-four hours. The child has the appearance of a fœtus about the seventh month; and this corresponds with the history which she gave, having last observed the catamenia on July 1st, 1859, and having quickened in the fourth month thereafter. The premature labour is referable in this case, as in very many others, to stretching the hands above the head while fastening ropes for clothes. During the whole period of her gestation, this patient had enjoyed excellent health; had never been exposed to any adverse influences, such as frights or anxieties, or any external injuries; and had been cheerful and happy throughout the whole time. When seen during confinement, she certainly had the look of robust health; and her subsequent recovery was excellent.

I shall first point out the various abnormalities which this interesting case presents; and shall then consider the probable causes of these; and lastly, I shall make a few remarks about such cases generally.

First, then, as to the abnormalities.—These we shall trace in order from above downwards. Here, you will observe, we have double hare-lip and cleft-palate. The neck in front seems much broader than usual, in consequence of the skin of the neck being attached along the whole length of the clavicle on the right side, so that the neck seems short, and presents very much the appearance of that of a person who had suffered from a severe burn in this region, and in whom adhesion between distant portions of integument had been effected to a considerable extent. The right upper extremity is quite normal. The left arm and fore-arm seem respectively of the same length as those on the right side; but from the inner bend of the elbow, for the extent of about half an inch, a web of integument is seen uniting the opposed surfaces of the arm and fore-arm, and preventing the latter from being removed from the former beyond an angle of about 75°. The elbow-joint, however, seems perfect, for flexion is freely permitted. The fingers are four in number, and are arranged in two bundles of nearly equal size, with a deep cleft between them, extending through their whole length. Each bundle contains two fingers. That corresponding to the ulnar surface presents a perfect nail on the finger on the outer side; and, though no outward distinction marks the other contained finger, it can be felt to be separate, and is seen to be shorter by the sloping of the integument. The other bundle or pouch presents an attempt at fissure between its contained fingers; but this only extends in depth to the root of the nails, which in this case exist on the end of both fingers, though in a very rudimentary form on that of the *outer* side. I may mention here, that the hand and arm are so twisted, that what is really the outer, seems at first sight to be the inner side. On the front of the left wrist, and towards the outer side, a portion of integument projects for about half an inch, in a conical form, and becomes continuous with a portion of the membranes of the fœtus; these last are quite transparent. On attempting to pull out the arm from the side, it is found to be attached by a web of integument, extending between the opposed surfaces for about a quarter of an inch in front, but a little farther behind, and which, when the arm is withdrawn from the side as far as it will permit, furnishes, with the other integumental web already mentioned, something like the appearance of the letter X. The sternum seems entirely wanting. The anterior portion of the ribs on the right side are everted, and diverge very much from the median line; those on the left side do so also, though to a less extent, thus leaving between them and those of the right a space resembling a Greek Λ, which is covered only with integument, the lower portion of the space being bounded by the aperture through which the liver, stomach, and intestines are found projecting. At the upper and left side of this opening is the insertion of the umbilical cord, a mere trace only being left, from its having been ruptured during delivery. From the lower portion of the cord, a band stretches to the principal division of the liver; this seems to be the suspensory ligament. From the centre of the upper margin of the aperture, bands of apparently organized lymph stretch downwards to the liver, indenting it, and holding it firmly in its present position. The liver itself consists of three or four lobules. Three of these are very apparent; viz., a central one, decidedly the largest, of a kind of wedge shape; and on each side of it two smaller ones, the one on the right side being the smaller of the two. To the lower surface of the liver the stomach and intestines are strongly attached; and, as already mentioned, they project with it through the opening, which is of a slightly oval shape, being nearly an inch and a half in its long or vertical diameter, while the transverse is about three-quarters of an inch. The lower margin of the opening is three-quarters of an inch above the pubes; and the upper margin is, as near as can be, 1½ inch from the clavicle. Round the right margin of the aperture is a kind of bevelled portion of thickened membrane, indicating, apparently, that at one time it had stretched over the whole of these projecting viscera.

Lymph is found on different parts of the liver. The intestines are matted together in a peculiar way. The mesentery does not seem opaque, and its glands are large, as usual in the fœtus. The penis and scrotum are normal, both as to size and position; but the testes have not yet descended. The anus is quite natural.

On the right side we have club-foot (talipes varus); but the toes are complete and natural. On the left foot, we have the little toe and the one adjoining covered by the same integument, with a slight fissure in front, just indicating the separation, which is also marked by two nails. These toes, thus united, are separated very decidedly from the adjoining toe, which, with the remaining two, is normal.

The fœtus is very much contorted; and, when held up, it presents an appearance not unlike that of the letter S.

2. In now proceeding to seek for an explanation of these morbid phenomena, we have our choice of two principal causes, viz.: 1st, A simple arrest of normal development, causing the organs to retain the type of an earlier fœtal state; or, 2d, This arrest, as the result of inflammatory action, either acting as above, or subsequently altering the normal condition.

In the present case, we must, I suspect, admit the possible operation of both causes, inasmuch as only thus can we give a satisfactory explanation of two series of facts which are here presented to us. That inflammatory action has been in existence, we cannot for a moment doubt, since we find portions of plastic lymph on the surface of the exposed liver; and see, moreover, the webs to which I have already alluded, and the attachment of the membranes to the skin of the wrist. Other abnormalities, however, in this case, seem as distinctly to point to mere arrest of development, without any necessary inflammatory cause. Thus the hare-lip and cleft-palate, and probably the two sacks on the left hand, each containing two fingers, are directly traceable to simple arrest of development. What, then, is the *modus operandi* of these several causes? To answer this question, we must consider the manner in which the parts are developed. Every one must be familiar with the fact, that between the superior maxillary and palate bones of opposite sides there exist, at an early period, two inter- or pre-maxillary bones; and that, as development advances, these coalesce with the former bones, and thus complete the roof of the mouth. Should this process, however, be interrupted, we have as the result, either single or double hare-lip, or either or both of these conjoined with cleft-palate; and though in some cases the single hare-lip appears to be *central*, yet this is only apparent, and not real.

The other example of *simple* arrest may to some appear more doubtful, since inflammation is not *necessarily* excluded in such a case. I refer to the two sacks or pouches of skin, each containing two fingers. This anomaly affords us an example of what Gurlt has called Syndactylus; and it is found in the present case also in the fourth and fifth toes of the left foot. In early fœtal life the germinal matter from which are formed the hands and feet is single, and it is only after a tolerably advanced stage has been reached that the division into separate fingers and toes is effected; so that, should anything occur to prevent this subsequent separation, we should have either the osseous structures united, or, while these remained separate, the cutaneous covering becoming common to two or more toes. But, as I have said, there are some of the conditions in this case to be attributed to inflammatory action. To Dr Simpson we owe the explanation of how this process in early fœtal life may produce grave abnormalities subsequently. In his admirable papers on Peritonitis in the Fœtus, he has with his wonted clearness and ability established the following two positions, which he has thus expressed:—"In malformations among the abdominal viscera resulting from fœtal peritonitis the displaced organs may be seen, 1st, in some of the temporary positions assumed by them during their evolution, and which they occasionally continue to occupy in cases simply of arrested development; or, 2d, they may be found drawn, to a greater or less extent, out of these positions, in consequence of the operation of the following agencies—the morbid contractile power which the false membrane on their surface exerts, or the ulterior changes and movements in the part or viscus to which it adheres." Applying to the present case the principles here laid down, we have an easy and most satisfactory solution of the problem regarding the mode of formation of the eventration which here exists. At an early period of fœtal existence, the whole abdominal viscera are contained in the base of the sheath of the umbilical cord: now we have only to conceive that peritoneal inflammation had at this time occurred, and bound the viscera in that position, in order to understand how the extroversion has occurred; since the anterior layers of the serous lamina, gradually approaching each other with a view to inclose the abdomen, would, in consequence of the presence of these extruded viscera, be unable at that part to effect a union. As these viscera gradually enlarged, they would either distend the infundibuliform portion of the cord, and carry in front of them the transparent membranes, forming a genuine case of exomphalos or true abdominal hernia, or, by rupturing the membranes, would escape externally, giving rise to what has, in distinction from the above, been styled Prolapsus. The membranes might subsequently have become so contracted or absorbed, as not to be visible at the time of birth. The contorted state of the fœtus also points to the likelihood of the membranes having been at one time attached to the intestines; for a similar appearance of the fœtus has been observed as the result of such a condition. We have, besides, distinct evidence of inflammation of the membranes in another locality; for we find a portion of them attached to, and continuous with, the integument at the left wrist.

3. Only once before had I an opportunity, in my practice, of observing a case somewhat similar to the above; and as it has some features of special interest, and will be referred to in the general remarks, I shall give a short sketch of it. Mrs M., æt. 29, third confinement. In her two previous confinements she had girls, both of which were perfect. She was at her full time, and the delivery seems to have been unusually rapid, since the child was born almost before the husband left the house to come for me. On arriving, I found the child (a girl) crying lustily, and presenting the appearance of being well formed, except in regard to the abnormalities to which I shall now allude. The umbilical cord, instead of terminating at the fœtal end, by an attachment to the abdominal integument, spread out in a manner similar to that which it exhibits at its placental termination,—the membranes, which were of considerable thickness in this locality, extending in a circular direction, till they were received into the integument in a kind of bevelled manner. The portion of the abdominal parietes thus supplied by the thickened membranes was about four inches in diameter. The left (?) fore-arm was found to contain only one bone, viz., the radius, which at the one end was anchylosed at an angle to the humerus, and at its other end terminated in two fingers. She gave me the following history:—She had felt desponding and very unhappy during her whole pregnancy. After the fifth month, when she walked, she felt (as she herself expressed it) as if everything was coming away; and on one occasion, so strong was this feeling, that she actually sought shelter, from fear that the child would be born on the street. She suffered from anorexia. About fourteen days before her confinement, she had pressed herself through a narrow space between her bed and the ledge of the recess in which it stood. She experienced at the time a great shock, and fainted; and for an hour or so afterwards she perceived no motion.

It was at one time believed that cases of this kind were most frequently of the female sex; but the two cases recorded exhibit one of each sex, which is quite in accordance with what Geoffrey St Hilaire has remarked; for he has found that the frequency of females occurs only when the abdominal fissure extends to near the symphysis pubis, constituting two of his genera, viz., Aspalasome and Cyllosome. Death, in such cases, always ensues at a very early period after birth, if they have escaped being still-born. Thus, of the two cases here recorded, in the first, death was almost immediate after birth; while in the second, death occurred about half an hour after that event. In some cases, however, they have been known to live fourteen hours, or even two or eleven (?) days. The death of the girl was so peculiar, and has so important a bearing upon the common cause of death in such cases, that I shall here record the circumstances attending it. The child was lying on the nurse's knee, and crying loudly, while I was examining the anomalies which it presented, when suddenly the crying ceased, and strong muscular contractions ensued, not unlike bearing down pains, which caused the membranes covering the umbilical portion of the abdomen to bulge out, forming a large hernia, containing a solid body, which I afterwards ascertained was the liver. I tried, by pressure with my hand, to counteract this tendency, when suddenly the thorax became collapsed antero-posteriorly, and life was extinct, save that one or two gasps occurred. The immediate cause of death in this case seemed to me to have been the deficient support afforded to the abdominal viscera, in consequence of the absence to such an extent of the natural muscular walls, thereby permitting the escape of these viscera, and also the excessive descent of the diaphragm, which in its turn, acting in accordance with its attachments, pulled inwards the ribs, which from their cartilaginous nature was easily effected, and these, again, exerting pressure on the heart, arrested the circulation. Independently, however, of the special cause of death in this case, the deficiency of the muscles of the abdomen must exercise a most injurious influence on fœtal life, especially when we consider that the respiration of the fœtus is chiefly abdominal. It has been observed as a general rule, that when the abdominal deficiency is more towards one side, the corresponding extremity is affected; and when the opening is central, the effect seems to be exerted on both extremities. It has also been remarked, that when the fissure extends into the thorax, the upper extremities are those which are affected. The case of the boy which I have related strikingly confirms this view, inasmuch as the principal abnormalities were on the right leg and left arm, and the imperfection extended, as I have said, from about three-quarters of an inch above the pubes, and is manifest in the thorax by the absence of the sternum, and the direction of the opening from below upwards was from right to left. The case of the girl, however, is exceptional in this respect, in so far as, while the deficiency was central and confined to the abdomen, she nevertheless had one of the arms very decidedly affected.

In some cases of this nature, the umbilical cord is sometimes nearly entirely wanting, and in others it is frequently found to be very short. Thus it was only about a foot long in the case of the boy. In those instances in which it is entirely wanting, we often find the viscera adherent to the membranes of the ovum, as they cover the placenta; and in one case in which this occurred a very interesting symptom was observed, which might perhaps serve as a diagnostic mark. None of the usual motions of the fœtus were ever felt; but when the patient lay on her back, a slight oscillatory motion was experienced.

The club-foot has, by Geoffrey St Hilaire, been accounted for by the condition just mentioned; but the present case clearly proves that other causes must be admitted, since the cord was about a foot in length, thus permitting free motion. In cases of club-foot, it is not at all unlikely that some affection of the spinal cord, either functional or organic, had existed at one period. Every one must have witnessed the permanent spasm of the flexor muscles of the extremities in the so-called carpo-pedal spasms in infants, which the French have named "Contracture," which is purely a functional disease of the spine. Now, if one system of muscles may thus be alone affected, may not the irritation resulting from the peritonitis have excited the spinal cord to exert its influence on the adductor muscles of this foot? We find limited action in other cases; and why not in this? I have seen a case where this permanent flexion of the foot occurred in an infant about six weeks after recovery from an attack of hydrocephalus.

Another circumstance to which I shall advert is the fact, that in the case of the boy the liquor amnii was much more abundant than usual; and, in common with many others, I have observed this same increase in cases of anencephala. Morgagni believed that these latter cases were produced by intra-uterine hydrocephalus; and we have only to suppose the skin or their membranes rupturing, and giving exit to the fluid, to explain why in such cases the liquor amnii should be greater in amount than usual. The inflammation of the peritoneum and membranes, giving rise to inflammatory dropsy, would account for the excess in the present instance.

I shall only add, that though some cases of exomphalos have been recorded in which the mother laboured under symptoms similar to those of the second patient, Mrs M., yet that there is no necessary connection between the eventration in the fœtus and the sad mental condition of the mother, the history of the first case sufficiently proves.

## ARTICLE III.—*Clinical Report on the Diseases of Women; with Observations.* By ALEXANDER KEILLER, M.D., F.R.C.P.E., Senior Ordinary Physician, and Clinical Lecturer on the Diseases of Women, in the Royal Infirmary, Edinburgh.

(*Continued from page* 503.)

### ILLUSTRATIONS OF THE OPERATIVE TREATMENT OF PROLAPSUS RESULTING FROM PERINEAL LACERATIONS, ETC.

CASE VII.—Isabella G——, æt. 31, single, admitted March 14, 1857. Was delivered of her first child on 13th of November last, by means of instruments. The child was born alive. When she began to move about, she felt much pained in the passages; and, about six weeks after delivery, first observed the womb to press low down whenever she attempted to walk. Her attendant advised her to use a piece of sponge to keep the prolapsus up, and to use oak bark decoction as a lotion. Afterwards an oval gutta percha pessary was introduced, which she wore for some time, when she was recommended to Dr Keiller to have an operation performed on her.

On examination, when she came into the Hospital, the uterus was felt to be very low down in the vagina, close to the external orifice. She states, however, that it never comes altogether out. The perineum is lacerated to a considerable extent, there being only a small portion of it remaining. The cicatrix, indicating the direction of the tear, is towards the left side, and is hard and cartilaginous. The rectum protrudes into the posterior wall of the vagina, and the bladder slightly so into the anterior.

March 18. Patient's bowels having been thoroughly cleared out by purgatives and enemata, Dr Keiller's usual operation was to-day performed. The structures between the vagina and rectum being in this case extremely thin and cartilaginous, very great care was necessary in removing the mucous membrane without endangering the immediately adjacent bowel. The sphincter ani was divided on each side. After the operation, the usual treatment of opiatizing and catheterizing was carried out.

March 20. Parts are looking slightly œdematous, and somewhat erythematous. Pulse 76. To have lead and opium lotion frequently applied. The opium pills to be continued every five hours, as formerly.

March 23. The deep sutures were removed to-day, being the fifth since the operation. A very little pus came away with the sutures. A small ulcer remains on either side where the quills were pressing. The vagina was syringed out with warm water. Ordered steak diet, with half a pint of porter.

March 26. The superficial sutures were removed, and the parts well washed. To have only 1 gr. of opium at night, and ʒss. of castor oil.

March 27. Complains of headache and sickness. A warm water enema was given in the afternoon, as the castor oil had not acted; it brought away a large quantity of fæces. Pulse 80, and soft.

March 29. Parts are looking extremely well, the incisions having united entirely by the first intention.

April 6. Since last report, has been steadily improving. Parts have entirely united, both deeply and superficially. On inserting the finger into the vagina, the new perineum is now felt to be of considerable thickness. The rectocele is quite gone.

April 18. Being now quite recovered, she was to-day dismissed *cured*.

CASE VIII.—Jane M——, æt. 35, married, admitted March 16, 1857, on account of prolapse of the rectum and vagina, consequent upon extensive laceration of the perineum. She is the mother of three children, the oldest being five years and the youngest seventeen months old. None of her labours have been very difficult or tedious.

At her first confinement she had flooding to a very great extent. The medical man who was called did not arrive till after the child was born; and, as she then complained of considerable pain, he examined her, and found that the perineum was much torn. About nine months after the birth of her child, the womb began to come down; it has never, however, appeared externally.

About fourteen months after, she came to Edinburgh, to seek relief from severe bearing-down feelings and pain in her back. She was then treated by palliative measures. Soon after this, she again became pregnant; but, after the birth of her child, was as bad as ever; and has, more recently, got much worse, owing to the womb and passages coming down much lower than they had ever done before.

The symptoms she now most complains of are great pain in the parts, with much downward pressure. She has no great difficulty or pain in micturition; but her bowels are generally very costive, and during defecation much pained.

On examination, the parts are found to be very relaxed. The perineum is exceedingly defective, in consequence of an obvious rupture, the laceration having taken place directly backwards and slightly to the left side of the middle line. The uterus is lying very low down; and, on causing the patient to cough or strain, the os appears projecting beyond the external orifice. The rectum is also pushed forward towards the vagina, causing a well-marked rectocele.

March 19. Patient's bowels having been previously well cleared out by purgative enemata, the perineal operation was performed in the usual manner. Patient having been chloroformed and placed in the position for lithotomy, a horse-shoe portion of mucous membrane was removed in the ordinary manner, and another portion, to the extent of 1½ inches long by ¾ of an inch broad, dissected off from the vaginal surface of the rectocele. A small artery here spouted, which, however, torsion readily stayed. The sphincter ani was divided on both sides, but the skin was not cut through. After the operation, she was placed on her left side; and, when recovered from the influence of the chloroform, had 2 grains of opium, and 1 grain to be given every six hours afterwards; the urine to be also drawn off at the same intervals.

March 20. Slept well. Parts looking a little œdematous posteriorly. Pulse 84, and of good strength.

March 22. Parts rather redder, but not so œdematous as before. Ordered lead and opium lotion to be applied.

March 23. The quilled sutures were removed to-day. There was very little irritation where the sutures (thick twine) were passed, and almost none where the quills were pressing. Ordered steak diet and half a pint of porter.

March 25. Quite free from pain. Parts looking very well. Superficial sutures were removed. Union by the first intention has taken place over the entire surface. Her bowels were moved freely to-day without medicine, and the parts were not at all disturbed.

March 28. Feels quite well to-day. Omit the opium, except at night; and to pass urine herself, by turning on her hands and knees.

April 2. Since last report, patient has been unwell. The menstrual discharge has now stopped, and she feels quite comfortable. The parts are now quite healed, except at one part where the quill was pressing.

April 4. All the parts involved in the operation are now entirely healed, and a good perineum is found formed. She suffers no uneasiness. Sleeps and eats well.

April 6. Was permitted to rise for the first time to-day, but not to walk about.

April 20. Since last report, patient has been rapidly gaining strength; expresses herself as "as well as ever she was;" and was, accordingly, dismissed *cured.*

CASE IX.—Mary A—— S——, æt. 35, married, admitted March 19, 1857. Is the mother of five children. All her labours, except the last, were very quick. She dates her present complaint from her last confinement—now three years ago—when she was rather longer in labour than usual, but cannot particularly account for the accident, as no instruments were used. She got up on the third day after her delivery, but was obliged to go to bed again. She never felt anything amiss till about fourteen months after her last confinement, when she became unwell. She was at this time nursing. The discharge was more copious than ever previously, and contained large clots. Her principal complaint at this time was "great pain in the small of her back," pain in the perineum on sitting down, and prolapse of the womb, which last never became external, but often nearly so. She was also very weak, and unable for any exertion. She continued in this state for a long time, and received no relief from various modes of treatment.

On admission, she complains of the symptoms mentioned above; and, in addition, she has frequent calls to make water. Her bowels are also habitually constipated.

On examination, the perineum is seen to be considerably torn, only about one half-inch of it remaining. The vaginal walls were protruding in the common forms of cystocele and rectocele.

The radical treatment was had recourse to by Dr Keiller, and the patient made a good recovery.

CASE X.—Rosina G——, æt. 36, married. States that she is the mother of one child, born in December 1856. Her labour lasted sixteen hours, and instruments were used. She remained in bed for a fortnight, but several weeks elapsed before she was able to move about. On the least exertion, involuntary discharges from the bowels took place, from the time she first began to walk about. She frequently took sedative astringents, to check the continuous looseness of her bowels. No improvement, however, took place; and she applied for relief at the Hospital, and was admitted for radical treatment on April 18, 1857.

On examination, the perineum was found to be entirely absent, the sphincter ani being completely torn through; the recto-vaginal septum alone intervening between the anus and vagina, which sufficiently accounted for the total want of control over the contents of the bowel.

April 24. Dr Keiller operated to-day, by carefully denuding the mucous membrane from the various textures involved in the extensive laceration; and the raw surfaces were brought into apposition by means of four deep and five superficial sutures. An opiate was administered, and ordered to be repeated at intervals, and the urine to be drawn off occasionally.

April 27. The quilled sutures were to-day removed. The parts were found to be red and somewhat œdematous. No suppuration, however, existed.

April 28. Removed superficial sutures. The parts on which the quilled sutures had rested are now covered by a white slough, surrounded by a dark erythematous blush.

May 2. Erythema is entirely gone, and the slight slough referred to is separated. The urine requires no longer to be drawn off, as the patient can now pass it voluntarily without irritating the wound.

May 8. Bowels moved to-day, for the first time since the operation, without causing any separation of the adherent surfaces. The perineum, on examination, is found to be perfect, it being thick and strong, union having taken place throughout the whole extent of the wound.

May 17. Patient rapidly gaining strength, and able to be up the greater part of the day.

This patient continued to have complete control over the contents of her bowel, and was dismissed *cured.*

CASE XI.—Jane W——, æt. 33, admitted June 5, 1857. Had always been a strong and healthy woman till the period of her confinement, four weeks ago. Was delivered in the Maternity Hospital of a boy, alive, by forceps.

August 10. Patient having been duly prepared by purgatives and enemata, was to-day, under chloroform, operated on in the usual manner. In addition to the horse-shoe piece, there was also removed a triangular portion of mucous membrane from the rectocele. The quilled sutures were then applied, and afterwards five superficial stitches. Strong twine was used for the deep sutures. Half an hour after operation, she had 2 grains of opium, and was ordered 1 grain every fourth hour after, and urine drawn off every sixth hour.

August 13. Has suffered from an attack of bronchitis since the operation; but the cough is now much better, and the breathing pretty easy. Parts very œdematous; and a blush of erythema surrounds the quills, which were, therefore, removed.

August 15. Erythema not extending. Superficially the wound is entirely united. The vagina was syringed out to-day. In the evening, considerable hæmorrhage took place from the vagina, which was restrained by plugging the vagina with lint, and placing a large pad on the perineum, supported by a bandage.

August 16. Had very little sleep. Feels very weak. Pulse 130, soft and compressible. No return of the hæmorrhage, which apparently was caused by the too early separation of a ligature which was placed on a small artery cut during the dissection of the surface of the rectocele.

Notwithstanding the unpromising nature of the case, from the apparently injurious pressure required in plugging the vagina in order to restrain the unusual amount of hæmorrhage, it turned out uncommonly well—a firm and broad perineum being ultimately secured to the patient, who soon afterwards left the Hospital *cured.*

CASE XII.—Mary H——, æt. 22, admitted January 19, 1858. Was delivered of a male child at the full time five weeks ago. She was eighteen hours in labour; and as the head was passing the outlet, she became very restless, so that the necessary support could not be given to the perineum, which was extensively ruptured. After the labour, she was kept on her side; and although she made a good recovery, the edges of the laceration did not unite.

On admission, she complained of a smarting pain in her under parts, and could not sit down with comfort. The walls of the pelvic passages were very lax, and already the rectum and bladder were beginning to become prolapsed.

January 23. To-day the operation for restoring the perineum was performed. The lips of the lacerated parts were denuded of mucous membrane for about one inch and a half, but with some difficulty, as, from its recent formation, it readily tore in pieces when seized by the forceps. The other steps of the operation were conducted as usual. She was kept on her left side after the operation. Two grains of opium were given shortly after, and one grain ordered to be repeated every sixth hour. Urine to be drawn off every four hours.

January 25. The loops of the deep stitches were divided over the quills on the right side, and allowed to remain.

January 26. Stitches came away by gentle traction. The parts around are slightly inflamed and swelled, causing great separation of the positions of the insertions of the deep sutures. A considerable quantity of pus is coming away from the surface of the flaps.

January 29. Superficial stitches removed. Copious discharge of pus from the parts.

February 10. To-day she was examined, about an inch of new perineum was found to be gained, and she was ultimately dismissed *cured*.

CASE XIII.—Margaret B——, æt. 28, admitted June 17, 1858. This woman was admitted labouring under fits of an epileptiform character and trismus, from which she had been suffering for five days, and which was at once relieved by chloroform. She complained also of a "falling down of the womb," as she termed it, which, she stated, she first felt about six weeks after her last confinement, which occurred two years ago. Since that time she has become worse, the prolapsus causing an uneasy and bearing-down pain. She has had two children, both of whom were delivered by forceps. She was long in making her recovery the last time, and felt sore and torn in her under parts. On examination of the parts, it was found that the perineum had been torn through as far back as the sphincter ani. The orifice of the vagina was, in consequence, large, and the walls flaccid. On directing her to bear down, a large cystocele was produced, and also a rectocele of less size; but the uterus was not prolapsed.

On the back wall of the vagina, and in the line where the perineum had been torn through, a dense, hard white cicatrix is to be seen.

July 1. Being herself anxious to be relieved of her present condition, and as the formation of a new perineum was thought likely to prevent further protrusion of the parts, a horse-shoe portion of mucous membrane was dissected off the posterior wall of the vagina, about two inches in length on either side, and half an inch broad. The denuded surface bled freely, and two arteries were secured by silver ligature. The bleeding having ceased, three deep stitches were introduced, consisting of silver wire, and secured as usual over a piece of elastic catheter. The external lips of the denuded surfaces were then united by five stitches of iron wire. Patient was told to keep on her left side, and ordered one grain of opium every four hours, and urine to be drawn off by catheter.

July 2. Has not slept, but is suffering no pain. No febrile symptoms; pulse 80; no thirst. About an ounce of blood has oozed out of the vulva. The lips of the wound enclosed between the quills are swollen, and a slight red blush runs along the edge of the right lip.

July 3. The lips of the wound are to-day more swollen and inflamed, but there is no sign of pus from any point. To relieve the tension, the right quill was slipped out of the lips of the deep sutures, and one of half the diameter put in its place. Apply cold water dressing.

July 4. Passed a comfortable night; no febrile symptoms; opium continued; water drawn off; bowels still confined. She was to-day turned over on her right side, and both quills withdrawn out of the loops of the deep sutures, to prevent tension, and a silver probe on either side passed through the loops, to prevent their being withdrawn within the skin. There is a little ulceration of the skin under the left quill, but no pus comes from the side of any of the sutures.

July 5. The silver probes were to-day withdrawn, and in the evening the loops of the deep sutures had retreated beneath the skin.

July 6. A few drops of pus have come out from the orifices of the deep stitches, which are still allowed to remain in with the loops within the skin. The skin enclosed within the superficial stitches appears ulcerating.

Dr Keiller subsequently removed the deep sutures, and the patient was dismissed *cured*.

CASE XIV.—Mary H——, æt. 42, married, and mother of three children, eldest now 12 years of age. The first was a difficult labour, but the two last comparatively easy. She first felt a lump pressing down in her vagina eight years ago, especially when standing at her work as a washerwoman. She has never felt any great pain from the prolapsus, and has always been able to pass her water freely, except once or twice, when it was drawn off; but the tumour, when much protruded, causes considerable uneasiness. On examination, May 16, 1858, the perineum was found to have been lacerated back through the fibres of the sphincter ani. Three tumours are seen protruding from the open vulva, the uterus being found projecting in the centre behind a large rectocele, and in front a vaginal prolapsus in the form of a cystocele.

The case being considered a favourable one for operative treatment, Dr Keiller resolved to have recourse to the radical mode of cure whenever the bowels were properly regulated.

June 2. The operation has been delayed till the present date, in consequence of her having since admission suffered from repeated attacks of diarrhœa, which, however, being now better, a partial operation was to-day performed. Dr Keiller thought it advisable first to endeavour to contract the vagina by removing from the protruding surface of the rectocele a considerable portion of mucous membrane. This was done by careful dissection, and the wound brought together by silver wire sutures, seven in number. Urine to be drawn off every four hours, and to have two grains of opium immediately, and one grain every six hours following, as in previous cases. To lie on her left side, with the thighs tied together, a pad of lint to be applied to the vulva, and retained by a napkin.

June 4. No febrile symptoms, nor pain in the parts operated on. The lips of the wound are in close apposition; the upper part appears united; there is slight discharge from the edges of the cut surfaces. Bowels still confined, but she feels occasional griping pains in them, as if they would be opened.

June 6. To-day one of the stitches is found ulcerated out on one side, and the others appear loose, but cause no irritation.

June 11. The lips of the cut surfaces remain in close contact. The stitches remain in the line of the union, surrounded by a few healthy granulations. They were to-day removed, and very little discharge followed. In the evening the bowels were freely opened by a warm water enema with castor oil.

June 17. The line of the wound has now quite healed.

July 5. Is free from bearing-down pains. The cicatrix has considerably contracted. She gets up, but not allowed to go about much; ordered quinine and iron.

July 30. The rectocele being now greatly diminished, and the vaginal orifice considerably contracted by the preparatory procedure referred to, the patient was considered in a fit condition for the performance of the second and more important operation, viz., that for the more complete restoration of the perineum, and which was to-day done by Dr Keiller, in presence of a number of members of the British Medical Association, now meeting in Edinburgh. The mode of operation adopted in this case was strictly that of Mr J. Baker Brown, of London, who was present, and kindly assisted on the occasion.

This woman made a rapid and perfect recovery, and was soon able to fill a laborious situation in the Hospital, where she is now, in the enjoyment of excellent health.

CASE XV. Mary Ann P——, æt. 32, married, admitted August 23, 1858. About six months after her second confinement, now three years and nine months ago, she suffered from pains in her back and severe bearing-down, which increased so much for some time that she could scarcely move about. Her two labours were natural. For some time past she has been complaining of pains through the body, and occasional diarrhœa, and has also been troubled with worms, for which she has been taking Ol. Terebinth. The symptoms were somewhat subdued by various remedies, but she continued to suffer from those attending prolapsus.

The perineum being found to be entirely absent, and the uterus, as also the rectum, much prolapsed, Dr Keiller, on November 17th, performed the perineal operation, and brought the surfaces together by means of the silver suture. Ordered two grains of opium to be given shortly, and one grain every fourth hour after. Urine to be drawn off every six hours.

November 20. There is slight inflammation on either side of the wound.

November 22. Deep sutures removed to-day. Ulceration has begun where the quills had been resting; otherwise wound looks healthy.

November 25. Two of the superficial sutures were removed to-day, and the vagina gently syringed out with tepid water.

November 27. Bowels moved to-day; wound doing well.

December 3. The wound seems to be quite whole, and there is no discharge of any kind.

January 25, 1859. The perineum and parts are as much as possible *in situ.* She is very much improved in health, and now walks about without any discomfort or bearing-down pain. Dismissed *cured.*

CASE XVI. — Mary H——, æt. 25, married, admitted May 7, 1859. Healthy-looking woman, but very hysterical and easily excited. States that she is the mother of two children; that, when confined of her first child, she was only six hours in labour, which terminated naturally. Three years after (now two years ago) she was confined of her second child, which, she says, was a cross birth, and was in labour for twenty-four hours, there being no person but her mother with her. She was sure something went wrong as the child was delivered. She rose the day after, and felt the womb falling down, which has troubled her ever since. She has also had leucorrhœa to a great extent.

May 8. Dr Keiller examined her to-day, and found that the perineum had been much lacerated, subsequently allowing the uterus and vaginal walls to be considerably prolapsed.

May 10. Was operated on in the usual manner. Opium to be given as in former cases, and the catheter to be kept constantly in the bladder.

May 25. Sutures removed to-day; wound looks well.

June 10. Left the hospital to-day, *cured.*

CASE XVII. Eliza C——, æt, 28, married, admitted December 3, 1859. States that she has always enjoyed good health. In August 1857 she was confined (by a midwife, in England) of her first child, a male. Says she was in labour from the Sunday evening till Tuesday morning. She made a rapid recovery, and was up and going about her room on the fifth day after confinement. About two months afterwards she began to complain of bearing-down pains in her back, and her legs began to swell. About eighteen months after, she came to Edinburgh, still suffering from the pains in the back and limbs, general uneasiness, and occasional pain in making water.

December 4. On examination, per vaginam, the os uteri is felt situated about an inch from the orifice of the vagina, very much enlarged and thickened. The uterus measured by the sound 3½ inches. The perineum is found to be lacerated back to the sphincter ani. On causing the patient to cough or strain, the os and cervix uteri are protruded beyond the orifice of the vagina. She was ordered rest, and astringent injections with Tinct. Ferri Mur. internally.

December 23. The state of matters previously described having been very little improved, Dr Keiller to-day performed his usual operation for lacerated perineum, using three iron wire for the deep sutures, secured to quills on either side, and seven superficial silver wire sutures. Urine was drawn off after the operation, and two grains of opium given about two hours after, urine to be drawn off every four hours.

December 25, 3 A.M. Was called to see patient, and found her suffering from spasm of the bladder, causing her to void her urine in bed. Warm fomentations were applied to the abdomen, and the bladder syringed out, by means of a double catheter, with warm water and morphia, and the vagina douched with warm water.

*Vespere.*—Has been quite comfortable since morning. Wound looking healthy.

December 26. Had a rigor last night, which was soon relieved by warm applications and brandy. Feels more comfortable to-day; discharge of pus per vaginam. Ordered to be syringed out with tepid water.

December 31. Since last report she has been progressing favourably. Sutures, both deep and superficial, were to-day removed. The wound has entirely healed, and very little pus comes per vaginam; catheter to be continued for three days longer.

January 2. Bowels opened this morning by injection.

January 12. Has been up to-day, for the first time, and moving about; feels very weak; discharge ceased. Ordered four oz port daily, and generous diet.

January 20. Became unwell to-day.

January 24. Going about to-day in the ward; expresses herself as "as well as ever she was." Ordered to confine herself as much as possible to the horizontal position, and to use astringent injections night and morning.

February 7. Is suffering from a slight attack of pleurisy, having been out yesterday for the first time and caught cold. She suffered for some time after this from slight bronchitis, but was finally, March 3, dismissed, being quite well, and without any discomfort.

CASE XVIII. Catherine W——, æt. 27, married, admitted June 18, 1860. Says she always enjoyed good health up till three months ago, when she was confined of her first child. She was in labour from Thursday night till Saturday morning, and was then delivered by forceps. A few days after her confinement she noticed that her fæces passed involuntarily. She mentioned this to her doctor, who examined her, and found that the perineum had been ruptured. She kept her bed for a month, lying on her side as ordered. At the end of this time she began to go about the house, but felt miserable from the continued involuntary intestinal discharges. As she was changing her residence from the north to the south of Scotland, she was advised by her medical attendant to call on Dr Keiller, and have the radical operation performed. On admission, the perineum is found entirely gone, and the sphincter ani torn through, so as to leave only a very thin partition between the vagina and rectum. Ordered Tinct. Ferri Mur. thrice a-day.

June 25. Patient's bowels having been freely moved last night, and an enema given this morning, Dr Keiller operated, with the view of restoring the perineum, and of also securing the lost power over the anal sphincter. Three deep iron sutures, and four superficial stitches of silver wire, were used. The deep sutures were secured to quills on either side, as on former occasions. Two grains of opium were given an hour after the operation, and one grain every six hours after. Urine to be drawn off when required. Pulse 96.

June 26. Patient doing well, pulse 84. Feels very comfortable, and free from pain.

June 29. Deep sutures were removed to-day, and the vagina syringed out with warm water. Cold water dressing to be applied to the parts.

June 30. Was allowed to make her water herself, by turning on her hands and knees. Considerable purulent discharge. To be syringed out with tepid water night and morning.

July 3. Superficial sutures were removed to-day; purulent discharge very slight. The wound has united throughout its entire extent.

June 8.—Discharge almost entirely ceased. Dr Keiller examined her, and found the perineum thick, strong, and resisting.

June 13. The parts are now entirely healed up, and the patient has been going about the wards for the last three days; expresses herself as quite well; and as she has now regained complete control over the action of the bowel, she was dismissed *cured*.

(*To be continued.*)

## ARTICLE IV.—*Quarterly Report of Cases occurring at the Edinburgh Eye Infirmary*, 140, *George Street*. By BENJAMIN BELL, Esq., F.R.C.S.E., and PATRICK HERON WATSON, Esq., M.D., F.R.C.S.E.

*July* 1*st to September* 30*th*, 1860.

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|---|---|
| Tumours of Eyelids, | 3 |
| Wounds, Inflammation, Abscess of Do., | 1 |
| Hordeolum, | 2 |
| Ophthalmia Tarsi, etc., | 17 |
| Ectropium, | 1 |
| Trichiasis, | 1 |
| Epiphora, | 2 |
| Do. from Everted Punctum, | 2 |
| Inflammation of Lachrymal Sac, Fistula, etc., | 7 |
| Strabismus, | 1 |
| Ophthalmitis, | 2 |
| Wounds of Conjunctiva, Foreign Bodies under Lids, | 5 |
| Pterygium, | 1 |
| Inflammation of Conjunctiva, Acute, | 24 |
| Do. do., Chronic, | 25 |
| Do. do., New-born Infants, | 4 |
| Do. do., Gonorrhœal, | 1 |
| Do. do., Catarrho-Rheumatic, | 2 |
| Do. do., Phlyctenular and Pustular, | 21 |
| Do. do., Strumous, | 8 |
| Do. do., Catarrhal, | 1 |
| Granular Conjunctiva of Palpebræ, | 3 |
| Wounds of Cornea, "Fires," etc., | 11 |
| Inflammatory Affections of Cornea, | 7 |
| Ulcers, Vascular Speck of Cornea, | 18 |
| Opacities of Cornea, | 6 |
| Staphyloma, | 3 |
| Inflammation of Iris, Rheumatic, | 1 |
| Do. of Aqueous Membrane, | 1 |
| Synechia, Anterior and Posterior, Opacities of Capsule, | 5 |
| Cataract, Idiopathic, | 1 |
| Do., Traumatic, | 1 |
| Presbyopia, | 2 |
| Myopia, | 3 |
| Amaurosis, Glaucoma, Retinitis, etc., | 15 |
| Cases not Classified, | 2 |
| | 210 |

## ARTICLE V.—*On Pericarditis.* By W. T. GAIRDNER, M.D., Physician to the Royal Infirmary of Edinburgh, Lecturer on Clinical Medicine and on Practice of Physic.

(*Continued from Vol. V., p.* 743.)

### PROGNOSIS AND TREATMENT OF PERICARDITIS.

IN two previous papers (April 1859 and February 1860) in this Journal, I have endeavoured to bring both clinical and anatomical observations to bear on some of the more obscure points of the natural history of pericarditis. In the present communication, I propose to investigate some of the practical questions arising out of the preceding details.

What is pericarditis, considered as a subject for treatment? How is the clinical idea of this disease to be defined and limited, as compared with the pathological idea of it? What are the circumstances that determine the necessity for this or that particular course of treatment in the individual case? These questions must, I think, have often occurred to most modern physicians who have thoughtfully studied the course of pathological research; they emerge, too, very directly and immediately from the inquiry to which this paper is a sequel.

That a friction-murmur, *per se*, cannot be taken as proof of pericarditis requiring active treatment, is very clear from the preceding observations. For a friction-murmur may be present, and may continue an indefinite length of time, when there is no pericarditis properly so called, but only a roughening of the pericardium, the result of a former morbid process; and further, pathological anatomy shows, that in a considerable proportion of cases, a condition of the exterior of the heart, which in all probability must have led to exocardial murmurs of some kind, has actually been present, and has passed away, if not without symptoms, at least without the least trace of a history of acute pericarditis. Whatever be the pathology of the white lymph-patches and their allied fibrinous deposits in the pericardium, it is impossible to attribute to most of them the history of an acute inflammation, and it is equally impossible to deny them the power of producing a murmur. I am satisfied, in fact, on grounds previously stated (vol. iv., p. 909), that they do produce murmurs in certain stages of their progress; and that these murmurs must necessarily resemble, to a considerable extent, the friction-murmurs of pericarditis.

Friction-murmur, then, is only a sign that the pericardium is roughened; not a sign that it is inflamed or actively diseased. In other words, friction-murmur, though always a sign of disease, past or present, is one to be carefully scrutinized and judged by other signs and symptoms, before pronouncing it an indication of pericarditis requiring active treatment, or indeed any treatment.

Owing to the great difficulty, already pointed out in my first paper, of judging with certainty of the presence of friction-murmur in cases in which it is slight and ill-defined, I feel that it would be quite impossible to attempt any numerical estimate of the cases in which it has occurred to me to observe friction-murmurs, either *of insignificant clinical value*, or only thus far significant, that they require to be watched and studied, as the indications of a *tendency* to acute disease. I can only say, in general terms, that such cases are of considerable frequency, and would probably be discovered more frequently than they are if the state of the heart were carefully scrutinized by auscultation in every case. The stethoscope has in this particular, as in many others, operated upon the course of physical diagnosis somewhat after the fashion of the Romish confessional in moral diagnosis: it has brought many "secret sins" to light, and in the affairs of the heart has perhaps tended rather to exaggerate the importance of small aberrations than to furnish any new principle of treatment; possibly, indeed, it has in some hands proved to be even a dangerous instrument, by bringing strong remedies to bear, with injudicious rigour, upon comparatively insignificant diseases. Fortunately, the general diffusion of stethoscopic skill has, in this country at least, been closely accompanied by a bias towards the more sober and guarded use of heroic treatment, and hence this evil consequence of minute diagnosis has been gradually corrected. But I can recall many instances of patients frightened very unnecessarily by the observation of "something wrong" about the heart; and it is impossible to doubt that active treatment of one kind or other has often been applied to cases of supposed acute pericarditis upon indications which by no means justified it. Of course, the opposite error is also possible; but I think it will be generally admitted that the principles advocated in several of our standard works on the physical diagnosis and treatment of pericarditis expose us far more to the error of too meddlesome, than of too inert, practice.

There is one disease so notoriously the cause of pericarditis in a large proportion of instances, that few cases of it now pass under the notice of physicians without careful and frequent stethoscopic observations of the heart. "Every prudent physician, I presume," says Dr Latham, "searches after it (pericarditis), day by day, with his ear in all cases of acute rheumatism."[1] This principle of daily stethoscopic observation is fully adopted by several other authorities; and Dr Stokes goes much further than to watch for the first development of friction-sound in pericarditis, inasmuch as he says "it cannot be too strongly impressed upon the mind of the practitioner that, valuable as the discovery of the signs of an inflamed pericardium may be, it is not for these alone that he is to look, but rather for the indications of excitement of the heart, whether attended or not by the signs of exocardial or endocardial disease." And he proceeds to remark that these indications may demand local depletion, "even though no friction-sound or valvular murmur whatever be present."[2] Dr Walshe gives instructions tending in the same direction, though not so precise in detail; he thinks, however, that "before the occurrence of friction-sound there is no certainty in the diagnosis."[3] And even Dr Hope (with less of special reference to acute rheumatism) recommends the hand to be daily placed on the precordial region in every severe inflammatory or febrile affection, with a view to the discovery of any excited action which might lead to the discovery of pericarditis by auscultation.

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[1] *Diseases of the Heart*, vol. i., p. 139.

[2] *Diseases of the Heart and the Aorta*, p. 93.

[3] *Diseases of the Lungs, Heart, and Aorta.* Second Edition, § 1197.

Such precepts are of unquestionable importance, for good or for evil; they are, moreover, well founded in fact and careful observation. In all that Dr Stokes, in particular, says about the very early diagnosis of pericardial irritation before the period of friction-murmur, I most entirely concur. But this refinement of diagnosis must be accompanied with great caution, and an almost indefinable practical instinct, or tact, in the application and withholding of remedies, to make it either safe or profitable to the patient. Dr Stokes, indeed, well remarks elsewhere,—and it is the absolutely indispensable corollary of his instructions, as above given,—that "the boldness of treatment often betrays the timidity of the practitioner; he is terrified at discovering the disease, and his mind is more occupied with its name than its nature or actual condition." It is to the great importance of a practice founded on the vital manifestations, rather than on the physical signs exclusively, or even chiefly, that I wish now to remark. I am well aware of the cautions given by Dr Stokes on this subject, which make his chapters on Pericarditis so full of the best kind of instruction for the practical physician; and it is no less a duty than a pleasure to refer, also, to the excellent article of Dr Sibson, in the *British and Foreign Medico-Chirurgical Review* for July 1854, as embodying much sound and well-considered doctrine with regard to the prognosis and treatment of pericarditis, particularly in its rheumatic variety.

During upwards of six years of almost constant attendance in the Edinburgh Royal Infirmary as physician, I have of course had under my care a great many instances of pericardial affections arising in the course of rheumatism, and a certain number also concurring with other constitutional or local diseases. Purely idiopathic pericarditis I have rarely, if ever, witnessed; and I am much inclined to believe that (as morbid anatomy teaches) it very rarely occurs as a severe or clinically important form of disease. Pericarditis from direct injury, or from purulent affection of the blood after injuries; pericarditis following erysipelas, or pleuropneumonia; chronic or subacute pericarditis in connection with unhealthy suppurations in various parts of the body; with epidemic fevers, especially small-pox and scarlatina; and, finally, pericarditis associated with Bright's disease,—have all fallen more or less frequently within my observation, and in many of these last-mentioned forms the issue has been fatal. But of *rheumatic pericarditis*, and of *pericarditis without previous disease*, acute or chronic, *I have not had under my own personal care a single fatal case.*[1]

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[1] Two or three facts require to be mentioned, not as qualifying this observation, but as removing from it the suspicion of latitude and vagueness. Very lately a case occurred to me of pericarditis, in a patient (A. H.) sent in from the jail as labouring under acute rheumatism of fourteen days' standing. There was no swelling of the joints, but very acute pains in the limbs and back. The peri-

I am particular in stating this fact, not for the purpose of making invidious comparisons, but that the truth, as regards the prognosis of rheumatic pericarditis, and the results of carefully adjusted and cautious treatment, regulated mainly by symptoms and vital manifestations, may be fairly brought into view. It is now a pretty well-established fact that rheumatic pericarditis, whatever may be its ultimate bad effects as predisposing to hypertrophy, or atrophy, or other chronic disease of the heart, is not directly fatal in a large proportion of cases; and it is therefore extremely probable, if not certain, that the violently perturbative practice of Bouilland and others was the cause of many more deaths than were properly due to the disease itself, or than have usually been seen under a milder and more cautious system. I must add, that I have seen reason to suppose that rheumatic heart affections generally may be somewhat less common, and therefore probably milder in degree, in Edinburgh than in London, or at least in the great hospitals of the West End; and perhaps, like pneumonia, they may have been milder of late years. Still, I think I am entitled to add a strong and personal testimony in favour of the rapidly accumulating evidence, that rheumatic pericarditis, cautiously treated and not too much interfered with by special practice, is the very opposite of what it was supposed to be by Bouilland, Hope, Graves, and even Latham; and that it does not require, as a general rule, violent remedies to obviate its tendency to death, but is, on the contrary, easily relieved by mild and almost purely palliative measures, superadded to the general treatment of the rheumatic affection.

Let me endeavour to indicate, shortly, what has been my usual course of proceeding in dealing with such cases. In every

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cardial effusion, which was considerable, rapidly subsided under a few leeches, with continued warm fomentations. The patient showed, nevertheless, a degree of prostration very unusual in rheumatism,—symptoms, in fact, more resembling pyæmia. After some time an abscess formed beneath the right sterno-clavicular articulation, and this was followed by a host of abscesses in almost every part of the body, *but in no instance primarily in the joints*, although the shoulder-joint and the sterno-clavicular were ultimately laid bare, the abscesses in their neighbourhood having quite destroyed the ligaments,—leaving, however, the articular surfaces comparatively unaffected. The patient died. About two years ago, three cases of rheumatic pericarditis, two of which were pretty severe, occurred to me at once. One of these, a girl from Larbert, passed through the disease, and recovered. She was retained under observation a considerable time, and was then dismissed, having been able to walk about freely for several weeks, and almost every trace of abnormal sound, as well as of abnormal dull percussion, having disappeared. She went home in good health, but took ill within a fortnight, and died. I did not hear of this till some time afterwards, and I heard of it with great regret, and not without suspicion of a relapse. On writing, however, to Dr Cuthill of Denny, I found that no doubt had been entertained that the cause of her death was *typhus fever;* that the disease was characterized by the usual symptoms; and that there was no complaint or suspicion of anything wrong with the heart during the whole period of the illness. I have no doubt that the diagnosis was correct, for there was reason to fear that the disease might have been contracted in the Royal Infirmary at the time.

case of rheumatic disease, whether acute or chronic, I have made, as a rule, at the commencement of treatment, at least one or two very complete investigations of the cardiac sounds and impulse, to be used as testing observations for the future. I have also, at the same time, carefully investigated the habitual and the existing state of the cardiac function, and the history of any uneasy sensations or functional phenomena indicating disease, which may have been present at a former period. This done, and the heart being found free from suspicion, I have in future observations dwelt as lightly as possible upon the local examination of the heart, merely assuring myself, from time to time, that there was no very material change requiring more systematic attention.

If a murmur has been present on admission, it has not been too hastily assumed to be a new morbid process, unless accompanied by pain, or by the signs of effusion, or by marked tenderness on pressure, either over the costal cartilages or in the epigastrium. I have not thought it too much to wait for twenty-four or forty-eight hours, before commencing treatment, for corroborative evidence of the existence of true pericarditis in a doubtful case. Of course, careful watching, and examination at least twice a-day, has been the rule in all suspicious cases.

But in many cases of murmur, even when decidedly originating under observation, it has been my practice to look for something more than murmur as an indication for commencing the treatment addressed to an acute pericarditis; and this for two reasons. The alarm created by the announcement that the heart is wrong, is, in susceptible subjects, a serious objection to making this announcement on slight grounds. Having, accordingly, the clear conviction, for reasons which have been already submitted, that many friction-murmurs, unaccompanied by signs of effusion, or by cardiac symptoms, may be safely neglected; and being further of opinion that, as a general rule, the treatment of the rheumatic condition of the system is the best treatment also for the pericarditis, I have been slow to give effect to anticipations of evil founded on the presence of a mere murmur, particularly if slight and narrowly circumscribed in locality. The immense majority of such murmurs are found to present themselves over a part of the right ventricle, between the third and the fifth costal cartilage; and I have rarely found them, except when accompanied by tenderness on pretty *firm* pressure, or by signs of effusion, or of marked excitement of the heart's action, or by a short dry cough, or by cardiac oppression and angina, give any cause for permanent uneasiness.

It is consistent with my observation, though opposed to the statements of several authorities, that one or other of the above-mentioned symptoms is rarely wanting when signs of effusion, even to a limited extent, are superadded to those of murmur. In fact, I more and more tend to disbelieve in *really acute pericarditis, apart from vital phenomena or symptoms;* although many cases called pericarditis may have been insidiously developed, and have escaped attention till a late period, either from inattention, or from their not being really acute in the sense of demanding treatment. Among the symptoms mentioned, the dry short cough is perhaps the one most likely to attract attention, and should always lead to the suspicion of pericarditis, when not explained by the state of the lung. Moreover, the symptoms mentioned are occasionally developed as the earliest phenomena of the disease, being succeeded by the murmur within two or three days, as has been shown by Dr Mayne, of Dublin, and by Dr Stokes.

With regard to the treatment of pericarditis actually pursued by me in hospital practice, I shall keep in view chiefly the rheumatic form, inasmuch as most of the others present little room for remarks tending to any satisfactory result.

In saying that rheumatic pericarditis will usually end favourably under various methods of treatment, I am very far from wishing to depreciate the value of medical practice in this disease. No doubt, the field within which our operations are to be restricted is more limited than it has been supposed to be by those who think that a particular method is a *specific* against inflammations in general, or pericardial inflammation in particular. But I trust that few educated members of the medical profession will think the worse of any treatment, because it does not claim the character of a specific method. What I argue is, not that treatment is of no use, but that the general and constitutional treatment applicable to rheumatism should overrule the means addressed to the local disease, except within the very narrow limits which I shall presently point out.

I find it impossible to arrange the facts of my experience in this matter in the statistical form. For, in the first place, I do not know how many cases of really acute pericarditis I have treated; and in the present state of our knowledge, as indicated in a preceding part of this paper, it may safely be said, that every attempt to number such cases must involve elements of most serious fallacy. But, in the second place, I do not know how many of the cases I have treated have got well in the end, and looking to the remote consequences; some of them, for instance, may have recovered for the time with more or less of adhesion of the pericardium. Of this only I am certain, that as physician to the Royal Infirmary, I have not had under my care a case of rheumatic pericarditis fatal during the acute period of the attack.

Let me try to turn this fact to its proper use, as regards what may be called the heroic methods, bleeding and mercurial salivation.

I believe that the profuse employment of blood-letting in inflammations has long been diminishing, and that in Edinburgh, at least, it is pretty nearly extinct. I shall not, therefore, occupy space in demonstrating that that is a wrong thing which, to the best of my knowledge, very few indeed are in the habit of doing. For many years past, I have not heard that any physician in Edinburgh has used a lancet in rheumatic pericarditis. At all events, I am very sure that the lancet is used most sparingly by the profession in general, and has been so for many years past.

But I am not so sure about mercury. Undoubtedly the use of this treacherous mineral is now marked by very great caution; and we almost never hear of those bad consequences which are the direct result of excessive mercurial action. But is its use, as some even now use it, expedient or necessary? And in rheumatic pericarditis in particular, would patients recover better, or worse, were no mercury exhibited? Without altogether holding the question as decided, I am strongly inclined to answer both of these questions in a sense unfavourable to the use of mercury. My own use of this much vaunted and much abused remedy has been rather experimental than founded on conviction.

The reserve with which I have used a remedy which has so much testimony in its favour, may appear to require some explanation. The truth is, that, as a student, it was my fortune to serve in the hospital under a very bold mercurialist—a man of the most humane character, and of the most entire conscientiousness, who proved his sincerity in regard to this subject by undergoing, in his own person, three distinct salivations in the course of his fatal illness. Under this gentleman's directions I learned much that was valuable; and, among the rest, something in regard to the bad effects of mercury in rheumatic pericarditis. But I have never succeeded in learning anything as to its good effects, though on many occasions afterwards I have administered it with such caution as my knowledge of it inspired. It may be said that I have not done justice to the remedy. In one sense this is true; for I have very rarely given it, except after other remedies. But surely, with a remedy of the power ascribed to this one, and specially regarded as promoting the absorption of exudation, it is no real injustice to call it into operation only in cases of a certain degree of severity, and to watch with care its influence upon cases that have in some degree resisted other treatment.

But whether I have done justice to mercury or not in my personal trials of it, I believe I have used it so as to do justice to nature, which is, after all, perhaps a better thing. For, assuredly, if I had adopted the plan of giving mercury instantly, in every case where a slight roughness existed in connection with the first sound of the heart, I should have failed to observe that the immense majority of these cases never went beyond a slight roughness, or, at most, a slight but decided friction-sound; that of those which went beyond this, and were accompanied by a degree of effusion, a large proportion had only moderate effusion; and that, even when considerable effusion was present, a good cure was still possible without mercury.

I will conclude by mentioning, as nearly as possible, what has been the usual course of treatment adopted in the cases here referred to, in so far as it has differed from that of acute rheumatism, or of the other primary disease. I trust I have not acted under any narrow or bigoted feeling of opposition to established doctrines, any more than of empirical devotion to single remedies.

In the very beginning of some cases of pericarditis, where the pain was very marked, and especially where it had strongly the characters of angina, leeches have not unfrequently been applied in moderate numbers. From four to six leeches so applied, and followed by fomentations, have very commonly relieved the pain, and been followed rapidly by improvement. Where relief occurred, but was not complete, the application has sometimes been repeated. More commonly, one application has been all that I have thought requisite; and this only when strength and condition permitted, and when the symptoms had a certain degree of urgency. General blood-letting has not once been practised.

Fomentations, sometimes plain and sometimes medicated with opium, friction with camphorated and ioduretted liniments, and in obstinate cases the use of blisters, have been the chief local remedies besides leeches.

To conclude, I believe the principles of the safe treatment of pericarditis to be as follows:—1. To make large allowance for the insignificant and spontaneously healing class of cases revealed more by physical signs than by symptoms, and to regard them as demanding little active treatment; 2d. To consider rheumatic pericarditis in general as a disease susceptible, to a great extent, of cure under mild palliative local remedies and fitting constitutional treatment; 3d. To hold the constitutional treatment as subordinate to that of the disease with which the pericarditis is associated.

# Part Second.

## REVIEWS.

### *Gout: Its History, Causes, and Cure.* By DR WILLIAM GAIRDNER. Fourth Edition. London, 1860.

THE fact that a book has attained to a fourth edition, is a sufficient proof of the estimation in which it is held by the medical profession, and is of itself sufficient to place it beyond the reach of unfriendly criticism. Having on a former occasion given our readers a full account of this excellent work, we have now merely to express our gratification that the sound pathology and enlightened practical views of Dr Gairdner have been so favourably received, and so widely circulated. This circulation has not been confined to England; a translation into German having been made by Dr Braun, of Wiesbaden, several of whose notes, containing interesting matter, have been appended to this edition.

1. *Traité Pratique des Maladies Vénériennes: ou Recherches, Critiques et Expérimentales, sur l'Inoculation appliquée à l'Etude de ces Maladies.* Par PHILIPPE RICORD, M.D. Paris, 1838.
2. *Traité de la Maladie Vénérienne.* Par J. HUNTER. Traduit par le Docteur G. RICHELOT, avec des notes et des additions par le Docteur RICORD, Chirurgien de l'Hôpital des Vénériens de Paris. 3e Edition. Paris, 1859.
3. *Lettres sur la Syphilis, adressées a M. le Redacteur en chef de l'Union Médicale.* Par Ph. RICORD, etc. Paris, 1851.
4. *Leçons sur le Chancre, professées* par le Docteur RICORD. Redigées et publiées par ALFRED FOURNIER. Paris, 1858.
5. *Exposition, Critique et Pratique, des Nouvelles Doctrines sur la Syphilis.* Par M. P. DIDAY. Paris, 1858.
6. *Annuaire de la Syphilis et des Maladies de la Peau.* Par P. DIDAY et J. ROLLET. Lyon, 1859.
7. *A Practical Treatise on Diseases of the Urinary and Generative System.* By WILLIAM ACTON. London, 1860.
8. *The Modern Treatment of Syphilitic Diseases, both Primary and Secondary.* By LANGSTON PARKER, F.R.C.S. London, 1860.
9. *The Pathology and Treatment of Venereal Diseases, comprising the most recent Doctrines on the Subject.* By JOHN HARRISON, F.R.C.S. London, 1860.

ANDRAL long ago said that syphilis was so systematic, so symmetrical, that it may serve as a key to all pathology; and if pathology in general has made great advances in the last thirty years, no less has the pathology of venereal diseases made gigantic strides.

While it is a subject compact within itself, it has all grades of pathological processes connected with it. Though a specialism, it includes every organ, every tissue, in its comprehensive domain. If the knowledge of some diseases can only be acquired by the study of their literature, we have *the venereal* everywhere; for where do they not creep? They are rampant in our towns; we find them in every hamlet; the cottage no more than the palace is proof against them. Innocence and purity are tainted—nay, the marriage-bed is not exempted from the ravages of this foul plague.

These diseases, then, the curse and plague-spot of civilisation, have, for many an age, been the same as now we see them. There is certainly a period to which the origin of the venereal disease is referred; but any one who dips into the early literature of venereal diseases, that *mare magnum* of wildest superstition, will feel that he is instantly far beyond his depth, and will gladly retreat to the firm beach of his own observation to watch the tide-ripples which mark the course and progress of these maladies in the present day. The fact is, venereal diseases are probably the same now as ever!—only we know more about them now than formerly. They are no longer mysterious in their commencement, or various in their progress, and doubtful in their effects. The cloak with which shame, superstition, and ignorance had shrouded them has been torn away; and now we see them in all their nakedness—ghastly enough, no doubt, still obedient to laws as are other diseases, and hence subject to our professional rule, and more so, too, than most diseases with which we have to combat. What, then, was the condition of the pathology of venereal affections thirty years ago?

They owned one common source: *that* everybody acknowledged—they resulted from impure intercourse; but this common trunk bore various flowers, and still more varied fruits. There was gonorrhœa; and there were sores upon the genitals; and there were glandular enlargements; and there were constitutional affections with cutaneous eruptions. Were these all the result of simple filth? were they the product of one common virus—the venereal? and were they capable of reproduction under a different form in another individual? or had they each a separate origin? All these questions were virtually unanswered thirty years ago. The views of the illustrious John Hunter were those principally received at that time; and in his work published in 1786 he most distinctly advocates the identity of the source of gonorrhœa, chancres, and lues venerea; while Fabre, Pressavain, Cullerier (senior), Capuron, Lagneau, Vigaroux, Gibert, and Devergie not only supported these views in the general, but adduced their large experience in proof of the justness of the dogma, that all venereal diseases were identical in their nature, the principle being the same in all, and the difference being only one of form, which they believed to be attributable to individual peculiarities, to the site, and to the greater or lesser intensity of the irritation produced by the action on the tissues of the body by the one common cause—the venereal virus.

No doubt there were dissentients to this doctrine in every age; and long even before John Hunter's day the non-identity of gonorrhœa and syphilis had been very distinctly indicated. John Hunter, in fact, alludes to this himself; and it would appear that it was to the Graduation Thesis of Dr Balfour upon this subject, published in 1767, that he pointed. But the doctrine received little or no countenance; and it was not until the year 1793 that we find any man of distinction giving his support to the doctrine of the non-identity of gonorrhœa and syphilis. In 1793 Benjamin Bell published his work upon venereal diseases; and in the preface to it we find him apologetically introducing his views upon the subject in these words:—"The opinion which I have ventured to support, of the difference between the matter of gonorrhœa and that of lues venerea, will no doubt be censured by many. They ought, however, to recollect, in matters of opinion which cannot be proved by demonstration, that some uncertainty must always take place; and, before censuring with severity the opinions which others may suggest, they should consider whether their own may not be equally liable to objection."[1] But Benjamin Bell did not rest satisfied by asserting, and endeavouring to prove by analogy and argument, that gonorrhœa could not produce chancres or a lues venerea; he also maintained that the pus from the surface of a chancre, or from a secondary eruption occupying a mucous or cutaneo-mucous surface, could not produce a gonorrhœa—that, in fact, a gonorrhœa, though a local, was a *specific* disease, and was only capable of production by means of its specific virus—the gonorrhœal virus.

Hence the terms Virulent and Simple Gonorrhœa, still so frequently employed both by patients and practitioners.

In reviewing carefully, then, the state of opinion thirty years ago with reference to gonorrhœa and syphilis, it will be found that the facts adduced on both sides of this essential question, which formed the turning-point of all progress, tended to prove the following propositions:—

1*st.* That gonorrhœa was very much more common than chancres.

2*d.* That a purulent discharge from the urethra was sometimes, though rarely, followed by constitutional symptoms of syphilis.

3*d.* That the inoculation of purulent matter derived from the urethra sometimes, but rarely, produced chancres in the part inoculated.

4*th.* That irritants—chemical, mechanical and vital—sufficed to produce a discharge from the urethra.

Such facts, it must at once be obvious, left the whole question of the identity of gonorrhœa and chancres and syphilis quite undecided. The circumstances under which a discharge from the urethra was followed by constitutional syphilis, by suppurating buboes, by rheumatism, by swelled testis—and the connection between these morbid conditions, was quite undetermined; in other words, the commencement, progress, and termination of a case of gonorrhœa were altogether problematical. The prognosis was a matter of hap-hazard, and the treatment was purely empirical. Nay, the specificity of syphilis—its cause, its effects, its treatment—were all undetermined matters, in consequence of a scientific scepticism arising out of the too ready credulity and inaccurate and loose observation of preceding authorities.

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[1] *Treatise on Gonorrhœa Virulenta and Lues Venerea.* By Benjamin Bell. Vol. i., pp. ix. x., pp. 1-43.

In 1830, M. Ricord was appointed surgeon to the Southern Hospital of Paris, from which appointment, after thirty years of the most signal service to science and pathology, after making a reputation which is not only European but wide as the medical profession itself, he, in the zenith of his fame, in the height of his popularity, has retired to enjoy in the private practice of his profession that comparative repose which so long a period of hospital service, of onerous public duties as a teacher, and of zealous warfare in defence of his opinions and doctrines, was ill calculated to afford. Finding things, then, in this unsettled condition, M. Ricord set himself, by means of accurate experimentation, to study the cause of syphilis. The question he had to decide was, Had syphilis a special cause? was there a syphilitic virus? or did all venereal diseases originate from one common source?

Hunter had, long before, shown that the pus of a chancre, when introduced into the tissues of the body, reproduced a chancre. The observations of Bell and of Hermandez sufficiently confirmed that opinion. But then the counter-observations of Caron, Bru, Jourdan, Devergie, and Desruelles gave them a flat contradiction.

Where, then, was the source of fallacy? The use of the speculum showed that apparently simple purulent discharges from the vulva were very frequently *accompanied* by chancres within the vagina, just as gonorrhœa preputialis is frequently dependent upon chancres concealed within the foreskin. The true source, then, of the purulent discharge, employed for purposes of experimental inoculation, required to be absolutely determined if the results were to be noted with anything like certainty as absolute facts. Every and any pus from the vulva or urethra, every and any pus from within the cavity of the phymosed prepuce, could not afford unexceptionable results, unless the existence or non-existence of chancres was absolutely determined by preliminary inspection.

A rigorous system of preliminary diagnosis, joined with an extensive employment of experimental inoculation, has, in the hands of Ricord, proved, with reference to gonorrhœa—1*st*, That muco-purulent matter, obtained from a non-ulcerated mucous surface, gives rise to negative results when introduced into the tissues of the surface by inoculation; and 2*d*, and conversely, when an *apparently* simple gonorrhœal discharge produces chancre by inoculation, it may be certainly predicated of such purulent discharge, that it has been obtained from a surface upon which a chancre exists.

The next question requiring solution was, Whether or not a gonorrhœal discharge required a specific virus for its production, as we have seen was maintained by Benjamin Bell? Investigation and observation have served to prove that any irritant which suffices to set up inflammation of any other mucous membrane is quite capable, when introduced into the urethra, of exciting a gonorrhœal discharge; that, in fact, any irritant, whether chemical, physical, or vital, is quite sufficient to give rise to a gonorrhœa, and that the majority of females who communicate a gonorrhœa do not suffer from it themselves.

Gonorrhœa, then, having no specific cause, has no specific progress. It has no period of *incubation*, properly so called, between the application of its cause and the commencement of the symptoms. A period of time certainly elapses, but it has no approach to being a *definite* one—it may be hours, it may be days. Accordingly, any deductions made as to the real source of the affection by the length of time which may have elapsed between various possible causes and the first appearance of the discharge, is likely to give rise to nothing but the most erroneous results, oftentimes affixing suspicions upon persons perfectly innocent.

Neither has gonorrhœa any specific site. The urethra is the most common site for a gonorrhœa the result of sexual intercourse in both sexes; but it is just as absurd to limit its site to the fossa navicularis in man, as Hunter did, as it is to attempt to make distinctions as to its being a true or spurious gonorrhœa in a female by the part of the glandular apparatus of the vulva which is principally and primarily affected. In both forms of specific venereal diseases we shall find corresponding glandular affections; but there is nothing specific, or even constant, in the bubo which sometimes accompanies gonorrhœa; it is a simple bubo of irritation. In the epididymitis which follows neglected cases of gonorrhœa, which some have thought indicative of the existence of a specific poison, we can see nothing but an illustration of the acknowledged law of extension of inflammation by continuity of tissue.

Then, again, the whole history of gonorrhœal ophthalmia, and of gonorrhœal rheumatism, tends to prove that there is nothing more specific in the former than in the inflammation of the urethra, which has produced the purulent discharge, which by direct contact has excited the conjunctival irritation. In the latter we only observe a tendency in certain irritations of the urethra of the male so to influence the sympathetic system as to disorder the functions of distant parts, and so produce what is called gonorrhœal rheumatism—an affection only met with in man, and never once observed in the female.

Cutaneous eruptions have, undoubtedly, often appeared after an attack of gonorrhœa, but they are no proof of a specific development of the disease. The fact that a man has once contracted a gonorrhœa does not, we presume, prevent the possibility of his having suffered from the indurated chancre which is the necessary preliminary of constitutional syphilis, any more than it precludes the possibility of a *resinous* eruption being mistaken for a secondary syphilitic exanthema by those who are not too well acquainted with the appearances and characters of either.

There is nothing, then, in all this to give even a shadow of probability to the existence of any gonorrhœal virus, any more than there is to the identity of gonorrhœa and syphilis.

But perhaps it may be urged that there are undoubted cases in which a purulent discharge from the urethra has been followed by most indubitable symptoms of constitutional syphilis. We admit it; but at the same time we have no hesitation in asserting, that the number of cases in which patients attribute an eruption characteristic of secondary syphilis to an attack of gonorrhœa are infinitely more numerous still. Such facts seem at first sight to overthrow the doctrine which we have just attempted to propound; but more accurate observation shows that in all such cases a chancre has existed, which has been the undoubted source of the constitutional affection. This chancre may either have been concealed within the urethra, and been the source of the purulent discharge; or the chancre situated on the penis has coexisted with the gonorrhœa, and escaped observation from the comparatively small degree of uneasiness which it has produced; or the chancre has existed upon some other part of the surface, and has eluded observation. Such chancres situated on the finger, within the anus, upon the hairy scalp, among a thick bush of whiskers, within the cavity of the mouth, or in other unusual and unlikely and often carefully concealed sites, may very naturally be overlooked by any one not alive to the doctrine of the inevitable connection of syphilis with the indurated chancre.

The conclusion, then, to which we must come is, that the great majority of cases of gonorrhœa are simple or benign, but that virulent purulent discharges do sometimes occur from the urethra. These, however, invariably depend upon chancres within the canal, and not upon any specific *gonorrhœal* virus. Such being the case, can we in any way decide beforehand, with anything like precision, upon the nature of a case of gonorrhœa, as to its *simplicity* or its *virulence*, as to whether there is simple inflammation of the mucous surface, or a specific ulcer situated upon that surface? The source of the infection, as determined by the presumption of comparative chastity, as we have already indicated, must go for nothing in any rigid examination of this question; for the chastity of any female who is unchaste in one instance may very justly be called in question in all. Nay, even when the female herself is found free from all disease, the experiments of M. Cullerier at the Lourcine sufficiently attest that she may serve as the temporary receptacle of the specific chancrous virus. Receiving it from one individual, though unaffected herself, she may hand it on to the next.

Some have laid much stress upon the period of so-called incubation of a gonorrhœa as a means of diagnosis. There cannot be a doubt certainly, as we shall have occasion to mention afterwards, that a comparatively long period may exist between the inoculation with the virus of an indurated chancre and the appearance of the characteristic sore; but as this is not the case with the soft chancre, such a means of differential diagnosis cannot enable us certainly to decide the non-existence of urethral chancres. As little does the *violence* of the symptoms serve as a sure indication of the *virulence* of a gonorrhœa; for, as a general rule, the urethral discharge which is attended by least pain and least purulent matter, is most likely to be produced by an indurated chancre, and therefore followed by constitutional syphilis.

There are symptoms, however, which, when duly appreciated, constitute a very valuable means of arriving at something like certainty with regard to the existence of urethral chancre. The first of these is, that the discharge usually consists of a sero-sanguinolent pus, with but little mucus, therefore usually scanty. The mere admixture of blood, however, in the discharge, is not of itself a sufficient indication to rely upon; for, in simple gonorrhœa, the rough use of instruments—such as syringes for injection, or bougies—the employment of irritating lotions, the presence of chordee or persistent erections, may give rise to this symptom without the existence of any chancre of the canal. The second is, that the pus, when inoculated, gives rise to a chancre. This, of course, is most positive evidence; and were it justifiable to practise inoculation in another individual who has never suffered from constitutional syphilis, or were chancres in all stages of their progress equally capable of inoculation, it would be absolute in all; but, unfortunately, the chancre with an indurated base is not capable of reproduction, as such, in the individual who has already suffered from it, and all chancres lose in time their specific characters. How, then, can we determine upon the existence of an indurated chancre of the urethra which is the certain antecedent of constitutional syphilis?—for this is the result which all authors who have entered upon this subject have sought most to arrive at. We have that power in some degree; for, certainly, the feeling of an *indurated* point in the course of the urethra, to which the patient refers all his symptoms, when markedly present, is very characteristic, but it must be carefully distinguished from the enlargement consequent upon suppuration within the cavity of one of the follicles opening into the lacuna; and when this induration is associated with the multiple bubo, symptomatic of the indurated chancre, our diagnosis may safely be decisive of the certainty of an outbreak of secondary syphilis within a limited period, the case being one, not of gonorrhœa, but of concealed urethral indurated chancre.

Turning now from these results of pathological inquiry, let us look, in passing, at the most approved methods of treating gonorrhœa. The affection is non-specific; therefore mercurial treatment is quite unnecessary for the cure of either the inflammation of the mucous surface or of any of its results.

Some sure method of prevention, by which the practitioner may pander to the vicious desires of those who would avoid the consequences of their own temerity, although often enough spoken of, does not exist. M. Diday, to be sure, has expended much ingenuity in the invention of a syringe for urethral injection, with a piston and handle closing down like the blade of a clasp-knife, suitable for the waistcoat, and designed to be a constant pocket companion, always ready in time of need. All such measures, fitted to create a feeling of false security in the minds of those whose fear of consequences might have compelled them to put a bridle on their passions, will be found by them, when too late, nothing but a delusion and a snare.

Some years ago, the so-called *abortive* plan of treatment of a gonorrhœa had its share of professional confidence. A solution of nitrate of silver, of the strength of ten grains of the salt to the ounce of fluid, was injected into the anterior part of the canal, with the supposed effect of destroying the cause of the disease, of cutting short commencing inflammation, and substituting in its place an inflammatory affection which runs its course more quickly and with less irritation. Experience has, however, proved that in the male subject, when employed after the characteristic gonorrhœal discharge has been established, its use is not unattended with serious risks, such as ulceration of the canal, perineal abscess, and inflammation of the prostate and bladder; and that, when employed before the discharge has made its appearance, its use was always open to the objection that, very possibly, we were inducing an actual inflammation for one which we had anticipated on no better ground than mere suspicion. At this early period of the attack, by rest and by avoiding every cause of local and general excitement, by the use of cooling drinks and diluents, starvation, and cold or warm applications, as the sensations of the patient indicate to be best, by being most grateful, much may be done to mitigate or even prevent the acute acme of the inflammation.

When, however, acute symptoms occur, blood-letting need never be had recourse to, and leeching is scarcely ever required. Rest, diluents, laxatives, diuretics, mucilaginous drinks, the hip-bath, fomentations, and the milder antiphlogistic remedies, with opiates if necessary, are all that modern experience can recommend. And then comes the time for the exhibition of those so-called specific remedies, Copaiva and Cubebs. Dirty, nauseous, permeating drugs though they be, nothing can equal them in the certainty and efficacy of their action; given together as an electuary, and taken after meals in rice paper to cloak the nauseating flavour, they are far more effectual than in soapy emulsions or sophisticated capsules. Their mode of action is a demonstration of recent date. It is not from any influence which they exert upon the system at large, or by promoting the excretion of any poisonous material from the blood, that they do good; for gonorrhœa is a purely local disease, and can only be directly benefited by local treatment. But these remedies, having been absorbed into the system from the alimentary canal, have their active principles again excreted with the urine, giving it a violaceous odour; and that fluid, impregnated with them, must, of course, come to act directly upon the inflamed surface as it is voided by the urethra. Hence it is, as experience long ago proved, that these remedies have no effect whatever in vaginal gonorrhœa or in purulent ophthalmia, or, in fact, in any suppurative inflammation of a mucous surface to which the urine is not applied. This has had ample proof in cases of gonorrhœa occurring in patients affected with partial hypospadias, when the urine, impregnated with the principles of the copaiva and cubebs, could be made to pass along the affected portion of the canal, or not, according to the will of the patient. Two such cases are detailed by M. Ricord, and carry conviction in their relation. But, while we must admit the powerful remedial effects of these so-called specifics, it must not be forgotten that sickness, vomiting, jaundice, acute resinous exanthemata may be produced, and are frequently produced, by the prolonged use or too free administration of copaiva; and that both copaiva and cubebs, when pushed in large doses, have been known to produce alarming cerebral disturbance. Such facts have induced some theoretically to recommend the direct application of the copaiva to the urethra itself in the form of an injection, so that, while its action on the part is secured, the system may be left unaffected; but experience proves that the same good effects do not accrue as from that remedy when filtered through the emunctories. Velpeau, again, has recommended copaiva enemata; but these, though at one time in vogue, are found so dirty, irritating, and inconvenient in their administration, and so uncertain in their effects, that they may be said to be effete.

With the use of these remedies, the good to be obtained from astringent injections must not be overlooked. Gonorrhœa, as we have seen, is a purely local disease, requiring nothing but local treatment; and, as soon as the acute irritability of the urethra will bear the use of astringents, there should be no delay in resorting to their employment. Largely diluted at first, but gradually increased in strength as the diminution of the irritability may indicate; always remembering that there is a point at which the astringent ceases to act beneficially, and commences to produce an irritant effect,—then, of course, requiring that dilution of the remedy, or a few days' intermission of the injection, should be recommended. Those salts which act purely as astringents are recommended by some; while, by others, solutions containing an impalpable powder in suspension are preferred—the latter substance being presumed to act by coating the opposed mucous surfaces, and thus preventing their immediate contact. This theoretical explanation of their action is certainly borne out by the undoubted fact, that the mechanical method of treating vaginal gonorrhœa by the maintenance of a very slight degree of actual separation of the mucous walls of that canal, by means of dry lint or dusting powder, has been found, without any further measures, to effect a complete and speedy arrest of the inflammatory secretion.

It is well known that gonorrhœal epididymitis is attributed by most patients, and by many practitioners, to the employment of injections; and, no doubt, if strong irritating injections are employed indiscriminately in the treatment of gonorrhœa, such a result may very reasonably be supposed to result from such temerity. When, however, the true pathology of epididymitis, as a sequela of gonorrhœa, is understood, it will at once be granted that, so far from exciting swelled testis, the judicious employment of injections is really calculated to prevent such a calamity. In such cases, it is well known that with the inflammation of the epididymis the discharge from the urethra is usually, for the time, either arrested or checked; and this coincidence is usually quoted as an example of that anomalous mode of extension of an existing inflammation which is called metastasis. Now, morbid anatomy has shown that, in the case of the epididymis and urethra, the extension is simply effected by the gradual progression of the inflammation along the urethra, and its extension by continuity of texture to the vesiculæ and vas deferens, usually upon the left side. Hence, if by neglect of a gonorrhœa the inflammation is given time to creep backwards, the affection of the testis may be expected as a natural result; and, accordingly, the period at which we most commonly meet with this complication is from a fortnight to a month from the commencement of the discharge. It seems, therefore, inevitably the conclusion, that if we can cure a gonorrhœa before it has had time to reach the membranous portion of the urethra, we will secure our patient from all risks of swelled testis, instead of inducing it, as has been feared, by too rapidly arresting the discharge. So true is it that a gonorrhœa allowed to follow its own course is the surest cause of epididymitis, that a burlesque of statistics has been adduced by M. Ricord, to the effect that the most common cause of swelled testis during gonorrhœa is the free administration of lintseed tea. "I have in my possession," says he, "in proof of this point, several elaborate tables of statistics; and the pupils who attend my clinical lectures await with a smile my final query, addressed to every patient affected with epididymitis, 'But haven't you taken lintseed tea?' to which the answer 'Yes' is inevitably returned." The natural conclusion from such statistics and such facts must certainly be, that epididymitis, like the other complications of gonorrhœa, is in no way dependent upon a revulsion, or metastasis, or any other chimerical morbid process, by which some would attempt to intimidate us in the use of means calculated to effect a speedy cure, but is produced by the continuance and extension of the suppurative inflammation; and, therefore, that the use of any means calculated to cure the discharge is the surest way to protect the patient from all risk of the occurrence of any of those disagreeable consequences.

Stricture of the urethra, it is well known, has also very frequently been referred to a similar source; but now-a-days we are wont to regard stricture rather as a consequence of a gonorrhœa allowed to run on, thus keeping up congestion of the mucous membrane and submucous tissue of the urethra, than to suppose that, by checking such pathological processes, we produce structural changes. In fact, whenever a surgeon finds a urethral discharge becoming chronic, it is a rule to examine the condition of the urethra by passing a bougie, so as to satisfy himself that such structural changes have not occurred; and, should they even not be present, the occasional passage of a bougie will be found the most certain means of preventing their formation and arresting the morbid secretion.

In spite, however, of all such treatment, a gleety discharge sometimes still continues—checked, no doubt, so long as injections are employed, but recurring again as soon as they are given up. In such cases the part affected seems to be the membranous portion of the urethra and prostate; and as no injection thrown along the canal can permeate farther than the bulb, if local applications are deemed requisite, some means must be adopted to secure the injection or astringent application acting beyond the barrier. This may easily be effected by means either of Lallemand's porte caustique, or by a catheter introduced as far as the prostate, and the injection practised through it as the instrument is withdrawn. In this way the discharge from the posterior part of the canal having been checked, the spongy part of the canal will be no longer contaminated from behind, and the discharge from it will now be found to yield permanently to the use of ordinary injections.

In treating the gonorrhœal swelled testis, there are three indications which it is important to attend to:—1*st*, To check the inflammatory symptoms. For this purpose, leeching or scarification of the scrotum, thus opening several veins, followed by hot opiate fomentations, will be found more agreeable to the sensations of the patient than resorting to the very doubtful measure of employing graduated compression of the inflaming organ, by means of adhesive strapping or collodion, from the very outset —a practice which, in even the skilful hands of Ricord, has resulted at times in sloughing of the testicle. When, however, the acute symptoms have been checked, then graduated compression will be found most satisfactorily to fulfil the 2*d* indication, viz., to support the congested and swollen part; while, 3*dly*, no time should be lost in employing appropriate remedies to arrest the gonorrhœal discharge. This may at first sight appear a mistaken practice; for it is generally the case that, as the testicle becomes inflamed, the gonorrhœal discharge is either checked or arrested, and, as the inflammation subsides, the discharge recurs, which might seem to indicate the propriety of using measures rather to encourage than repress the discharge. In fact, so strong a hold had this principle, of soliciting the reappearance of the discharge, taken of the minds of surgeons, that even to the present day some really do employ measures calculated to reproduce the discharge, such as introducing bougies coated with irritating substances. And it is no long period since a distinguished surgeon in a metropolitan hospital used to excite the risible faculties of his pupils, at the expense of any unfortunate suffering from swelled testis, by asking how the swelling came on; and when told by the patient that, as the swelling appeared, a "running" ceased, taking a sixpence from his pocket, he would say, "Well, my good fellow, here's sixpence to get another with." So much for the old pathology of a metastasis and its practical results. Now-a-days we believe that, as long as any discharge continues to come from the urethra, the patient is not free from the risk of the re-excitement of the epididymitis. Accordingly, the question is not, should the discharge be stopped, but, when this may be done with best success; and the answer to this must simply depend upon the period at which a patient suffering from acute swelled testis will bear the administration of cubebs and copaiva. Whenever his stomach will bear them, he should begin to take them. The urine soon becomes impregnated with them, and the irritation of the posterior part of the urethra is in most cases very speedily allayed, and with it the tendency to maintenance of the inflammation of the testicle. In other cases, again, where there is a sort of chronic tendency to the re-excitement of irritability and swelling of the epididymis, or when the globus major and cord remain thickened and tender, giving rise to most distressing neuralgic uneasiness, then the use of bougies, or even of the porte caustique, or injections of the deep part of the urethra, and the external application to the scrotum of solution of nitrate of silver, with attention to the condition of the general health, will usually effect a marked change for the better.

Although the existence of gonorrhœal rheumatism is pretty generally admitted in this country, from the notice taken of it by Sir Benjamin Brodie in his work upon the Joints, some doubt appears to exist in the mind of several eminent writers upon the Continent as to the connection between gonorrhœa and certain forms of rheumatic ophthalmia and articular affections. The most important and recent memoir, in which it is attempted to prove that there is no such thing as gonorrhœal rheumatism, is written by Professor Thiry, of Brussels; but as M. Rollet's more recent researches upon this subject constitute a most thorough refutation of the Professor's views, it is quite unnecessary to do more than, in a few words, to indicate the prominent facts adduced by M. Rollet with reference to this disease.

Several cases are narrated by him, in which repeated attacks of gonorrhœa are followed by corresponding rheumatic seizures; others, in which the same gonorrhœa, incompletely cured, is reproduced, and with each recrudescence of the gonorrhœal discharge a corresponding attack of recurrent rheumatism. In all such cases it is the rule that, so far from the discharge ceasing or becoming diminished with the development of the rheumatic seizure, it is rendered more abundant during its existence; thus completely upsetting the idea of anything like a true metastasis. He further adduces proofs of the existence of a gonorrhœal rheumatic iritis, which sometimes is substituted, at other times alternates with the articular disease, and the peculiarity of which appears to consist in the membrane of the aqueous humour being the texture principally implicated; thus making it in every respect the analogue of the affection of the articulations in which the synovial membrane is the part principally affected, and distinguishing it from the more common forms of simple or specific iritis, in which the substance of the iris is always primarily involved. In the gonorrhœal rheumatic affection, furthermore, the exudation is characteristically copious, as was long ago pointed out by Mackenzie; but, however copious, the prognosis may always be favourable, as, under ordinary sorbefacient treatment, the flocculent lymph is rapidly removed, and vision becomes restored.

Although the knee-joint is the articulation most frequently attacked, any joint in the body may be affected; and even the pericardium, the meninges of the brain, and other fibrous tissues, have been observed to suffer. Curiously enough, this disease has never been met with in the female sex.

This immunity of the female sex from gonorrhœal rheumatism certainly constitutes a well-marked difference between the common idiopathic rheumatism and the gonorrhœal rheumatic affections; and, in fact, so unconnected are they, that the existence of a well-marked rheumatic diathesis, or even previous attacks of a rheumatic kind, in an individual, appears to have no influence in determining the occurrence of rheumatic affections during the existence of a gonorrhœa. Exposure to cold or damp, the season of the year, particular occupations, constitution, temperament, age, habits,—none of these common causes of predisposition appear to exercise any influence in determining the development of this anomalous disease.

The only constant circumstance in these cases is the existence of a urethral discharge; and to this, apparently, must be attributed the excitation of the rheumatic affections. To explain the connection between this cause and its effects, two hypotheses have been proposed. The first presumes that absorption of some material from the purulent secretion takes place, and evolves itself elsewhere in the form of rheumatism. Those who hold this theory have generally described the gonorrhœa as becoming more or less checked when the rheumatism is set up—a statement which is, however, known not to hold good in almost any case; and the theory to which it would serve as a very efficient proof, has really no foundation whatever on facts or analogies. The second hypothesis would attribute to the inflammatory affection of some part of the urethra from which this copious discharge comes, a power so to influence the sympathetic system as, by reflexion, to produce the local affection of the joints; and with this hypothesis we find certain analogies coupled, such as the intermittent form of febrile excitement produced in some by the passage of a bougie, or the actual effusions into the joints, accompanied by rheumatic pains, which sometimes arise in the progress of a case of stricture of the urethra when too frequent or indiscriminate instrumentation has been had recourse to. What part of the urethra it is that resents irritation in this way, has not been particularized. Some have referred it to the bulb, some to the membranous portion, others to the prostatic part of the canal. Whatever part or parts of the urethra may possess this peripheral influence upon the sympathetic in the case of a gonorrhœa, certain it is that an instrument passed into the bladder, and retained there, in a case of stricture, is more liable to excite rigors followed by febrile reaction when fairly conveyed into the bladder, than when merely lodged with the extremity in the membranous part; and those practical surgeons who are in the habit of retaining the instrument for a time in the treatment of stricture of the urethra, usually recommend that the bougie should merely be passed through the stricture, and not lodged in the bladder.

The rheumatic affection, then, being dependent upon the gonorrhœal inflammation for its commencement and its maintenance, so far from desiring to increase this discharge, as was the practice among the older surgeons, our object must be to arrest it as speedily as possible; for, cure the rheumatism as we may, so long as the urethritis continues, it is almost certain to relapse, and an exacerbation of the urethritis is certain to excite a fresh attack of the synovial inflammation. Repose, leeching if required, fomentations, the vapour bath, and blistering, followed by pressure applied to the joint, are the local measures usually resorted to in such cases, and generally they are found to be attended with the best results. The acetate of potash, with colchicum and hydriodate of potash, have been recommended by some writers; but experience proves them to be of comparatively little benefit when compared with their excellent effect in cases of idiopathic rheumatism. Should the thickening of the synovial membrane threaten to become persistent, then, instead of repeated blistering, the Emp. Gummos. c. Hydrarg., or Emplatre de Vigo of the Parisian Codex, will be found, when combined with pressure, to be very beneficial.

It is seldom necessary to resort to the internal administration of mercurial remedies for the articular affections. When iritis, however, exists, then no other remedy produces such speedy and well-marked effects in promoting absorption of the exudation and restoration of vision. In such cases, paracentesis of the aqueous humour, the use of belladonna, and the repeated application of blisters, will be found especially useful where the tension of the globe is considerable, and pain is a well-marked symptom.

In the treatment of purulent gonorrhœal ophthalmia, depletory measures are found to be not only useless, but absolutely injurious. The days are past when, in gonorrhœal ophthalmia, a surgeon would recommend that "as much blood should be taken from the arm as will flow from the vein, and the evacuation should be repeated as soon as the state of the circulation will enable us to get more." And, assuredly, we have better results now-a-days than those related by a distinguished surgeon, who says that "the only case he had seen in which the eye was saved, was that of a young woman in whom venesection was repeated as often as blood could be got from the arm. She lost 170 ounces in a few days, and looked as if every drop of blood had been drained from her body, the skin being nearly the hue of a wax candle." While the experience of modern ophthalmic surgery has certainly no equal to that which induced an Irish surgeon to say, "These are cases which defy all the usual etiquette of regular and ceremonious visits. If we wish to save our patient from the destruction of his vision, we must scarcely depart from his bedside until the inflammatory symptoms are controlled. The lancet must be hardly ever out of our reach; for if ever there was a disease in which blood must be taken away without limitation, it is this." This inflammatory affection, like that of the urethra, is a purely local one, and is in great measure maintained and increased by the presence of the purulent discharge confined within the lids acting as an irritant to the whole conjunctival and corneal surface. The old notion, that such purulent inflammations might be other than the result of the direct application of the gonorrhœal secretion, either of the same or of another individual, to the surface of the conjunctiva, is now completely exploded; at all events, in the minds and works of those practitioners who, with large opportunities, rely upon their own experience for facts, instead of taking for truths the observations of the older surgeons, whose minds were biassed by theoretical speculations which no one is now-a-days inclined to accept. Accordingly, the indications to be attended to are,—1*st*, to maintain cleanliness; 2*d*, to apply astringents to the inflaming and inflamed conjunctiva; 3*d*, to soothe pain; and, 4*th*, to relieve tension. These indications are carried out in practice by pencilling the solid nitrate of silver over the tarsal conjunctiva, or by applying either a solution of the salt, or Mr Guthrie's ointment, within the lids till the surface is whitened, and repeating it as frequently as the renewed increase of the discharge, and the reappearance of the red velvety surface of the conjunctiva, indicate the necessity of its re-application. Cleanliness is maintained by frequent bathing of the eye, and by syringing beneath the lids with a slightly astringent lotion, which should contain either belladonna or opium, to soothe the pain; and when the chemosis is great, and the overlapping membrane hides a circularly ulcerating cornea, then not only scarifications in the conjunctival membrane, but puncturing of the cornea and the evacuation of the aqueous humour, will be found attended by a marked relief to tension, and will for the time allay the injurious friction of the tarsal conjunctiva against the cornea, which threatened to slough had matters continued much longer unrelieved.

Gonorrhœa in the female, in its early stage, may be checked, when the vagina and vulva are alone affected, by the free application of the solid nitrate of silver to the surfaces; and if there is any pain in micturition and redness of the urethral orifice, a similar application to that canal, by means of a short porte caustique, will be found to arrest the further progress of the attack. When, however, acute symptoms have fairly set in, and such manipulations would give rise to intolerable pain, then rest in bed, warm bathing, the application of a solution of acetate of lead and opium between the folds of the labia, and similar injections up the vagina as soon as they can be borne, will pave the way for our resorting to more effectual measures; of which, astringent injections, such as alum and oak bark, the introduction of strips of lint up the vagina, and injection of the urethra by means of weak solutions of nitrate of silver, will be found attended by better success and less discomfort to the patient than any other method of treatment.

P. H. W.

(*To be continued.*)

*A System of Instruction in Quantitative Chemical Analysis.* By Dr FRESENIUS. Third Edition. Edited by J. LLOYD BULLOCK, F.C.S. London: Churchill, 1860.

*The First Step in Chemistry; a New Method for Teaching the Elements of the Science.* By ROBERT GALLOWAY, F.C.S. Third Edition. London: Churchill, 1860.

BOTH these manuals have again and again been favourably noticed in our pages. On examining this later edition (the third of both) we find ample evidence not only of careful revision, but also of considerable improvement.

The work of Dr Fresenius is the standard one on Quantitative Analysis, and is largely used in our northern schools. For this success it is indebted to the simplicity of the arrangement adopted, and to the clearness and precision of the language. The translation appears to be carefully executed, and we have no doubt that this new edition is a careful transcript of the latest German edition. The editor states that "the entire work has been recast, considerably simplified, and almost rewritten. New matter has been introduced to the extent of one-fourth of the whole volume." And also, that "many of the processes have been replaced by others, more certain, simple, and efficient."

Mr Galloway's little work, as its title implies, is intended for junior students; and we speak from experience when we say that it is well adapted for imparting a knowledge of the principles of chemistry. This new edition is much enlarged and improved, and the author has rendered it more worthy of the patronage of teachers.

*Clinical Memoirs on Abdominal Tumours and Intumescence.* By the late Dr BRIGHT. With Illustrations. Edited by G. HILARO BARLOW, M.D., M.A. Cantab., Physician to Guy's Hospital. The New Sydenham Society. London, 1860.

*A Year-Book of Medicine, Surgery, and their allied Sciences, for* 1859. Edited by Dr HARLEY, Dr HANDFIELD JONES, Mr HULKE, Dr GRAILY HEWITT, and Dr ODLING, for the New Sydenham Society. London, 1860.

DR BRIGHT'S Memoirs on Abdominal Tumours may rank worthily as continuations of his celebrated "Reports of Medical Cases." Conducted on a similar plan, they display the same remarkable powers of accurate and unbiassed observation of details, and of cautious yet comprehensive induction of general principles, which have placed Dr Bright in the first rank of the philosophical physicians of his time. There is not, indeed, in these memoirs any such striking discovery as that with which Dr Bright's name is always associated; nor, after the twenty years which have elapsed since the papers appeared in Guy's Hospital Reports, can any attraction in the way of novelty be expected. But the memoirs possess a permanent value, as models of clinical reports, as exhibiting the method by which the investigation of this difficult class of organic diseases may be pursued with greatest certainty of success, and as furnishing the great general outlines of the inquiry. It is by the study of such models that the difficult art of medical observation may best be understood, and may, to some extent, be acquired. Certainly, no papers in our periodical literature were more worthy than these of being republished and circulated in a collected and accessible form.

In accordance with the plan of its predecessor, the New Sydenham Society has hitherto limited its efforts to the reproduction of standard works, which had already attained a high reputation. A most important innovation has now, however, been introduced by the issue of a Year-Book of Medicine and Surgery, which is intended to collect together the most recent information from the medical literature of the day, so as to exhibit the progress made during the year in the different departments of science and practice. Of the necessity for works of this class, there cannot be two opinions. Not only is the amount of medical literature which annually issues from the press enormous, but the contributions are scattered through so many periodicals, and are expressed in so many different languages, that few individuals can gain access to or avail themselves of original sources of information to any great extent. By means of our Medical Journals, and especially by the system of reviews, which has been carried out in our own country to a larger extent than on the Continent, the profession has generally been well informed in regard to the most important advances made in medicine. But with the extended and increasing literature of the present day, these means are scarcely adequate to afford a complete survey of the actual progress. With this object, on the Continent, and especially in Germany, the system of annual reports has long been adopted, in which, along with a list of new works and papers, short abstracts are given of the principal facts and opinions contained in them, generally without any criticism, unless when they refer to questions which are at the time exciting attention or discussion. Of the usefulness of these reports, all who have consulted them will bear the fullest testimony. They supply a very valuable bibliography; they enable the reader to judge what papers or works he may study with advantage to his peculiar pursuits; and they present a condensed summary of the most important advances and improvements in Medical Science. With the single drawback that, though excellent to refer to, they are mostly by no means interesting to peruse, these annuals reports fulfil their purpose very completely, of affording a general view of current medical literature. The Half-yearly Retrospects of Ranking and Braithwaite have also done similar service in our own country.

In its main features, the Sydenham Society's Year-Book presents a close imitation of the German yearly reports to which we have referred. The volume, under the superintendence of the general Editor, Dr Harley, is divided into five parts, each of which is assigned to a separate Editor. The first section, under the title of the "Institutes of Medicine," contains the report on the sciences allied to Medicine—Anatomy, Physiology, Histology, and Chemistry; and is edited by Dr Harley. Next follow, in their order, the reports on Practical Medicine, by Dr Handfield Jones; on Surgery, by Mr Hulke; on Midwifery, by Dr Graily Hewitt; and on Legal Medicine, by Dr Odling. Each section contains several chapters corresponding with the principal divisions of the subject. The titles of works and papers to be referred to are placed in a list at the head of each chapter, and are accompanied, in the case of foreign works, by an English translation. The notices of these works then follow, printed in convenient type, and although always short, vary in length with the nature or importance of the communication reported on.

Under these different divisions a very large amount and variety of valuable information has been collected; and we do not think that more matter could possibly have been more judiciously condensed within the same space. The editors have endeavoured to give a complete and exhaustive survey of each department; and, taking the volume as a whole, they have succeeded in a manner to convince the members of the Sydenham Society of the propriety of introducing these Year-Books, and of the great advantages which may be derived from them. At the same time, we regret to say that the present volume has not fulfilled the expectations which were entertained regarding it, and that in some parts it is unfortunately disfigured by frequent and glaring inaccuracies. We were disappointed to find so large a proportion of the abstracts mere abbreviated translations of the German Reports of Canstatt and Schmidt. That such excellent sources should, to some extent, be made available for information in regard to foreign works not otherwise attainable, is quite proper; but our English work must lose its independent value, if the Editors are content to copy at second hand the facts and opinions which may be given in the continental reports. The larger proportion of foreign literature appears, indeed, to be derived from such intermediate sources. And, in addition to other obvious disadvantages, the information obtained in this way must always be a year behind date; a circumstance which greatly diminishes the value of a Year-Book. We should certainly like to see more originality and independence exhibited in the succeeding volumes. We submit, that the perusal of the Report would be easier and more satisfactory if the titles of the works were classed in some regular order, and the remarks on each topic were brought together at the same part of the chapter to which they belong. It is tedious and confusing to find the different statements in regard to phthisis, for example, scattered apparently at random in the chapter on Diseases of the Respiratory System, mixed up with notices similarly disconnected on Croup and Asthma, etc. Judicious arrangement is the very essence of a report, whose chief object is to exhibit side by side, for purpose of comparison, or combination, the various facts and opinions bearing on any one point. By such order, the fragmentary appearance of these abstracts can alone be obviated, and the work rendered suitable for continuous reading, as well as for reference.

But the feature in the Year-Book which creates the most unfavourable impression, is the negligent and hasty manner in which the first part of it has been prepared. We meet with errors from the first page of the volume. In the list of abbreviations of works referred to, we find, along with other misprints, this Journal quoted as the *Monthly* Medical Journal, a name which it has not held for the last five years. Mistakes and mistranslations are of frequent occurrence in the list of works at the head of the chapters. We are told that Harting's work on the Microscope has been translated into the German "from the Hollandish;" and we find "Linhart, Anatomie et Topographie du pli de l'Aine" (on the Anatomy and Topography of the fold of the Groin), set down as treating of the "Anatomy of the Anus!" In the reports themselves, the same carelessness is exhibited in grammatical errors and awkward sentences. Fortunately, in point of matter, the majority of the abstracts are excellent; but even here similar defects are apparent. Some of the notices are exceedingly superficial; and a few, by omissions or inaccurate expressions, are rendered positively erroneous. Thus we find the result of Mr Lister's important paper on Inflammation given as follows:—"Our author concludes by saying, that it may be looked upon as a fundamental principle, that whenever inflammatory congestion exists in any degree, the tissues of the affected part experience a proportionate functional activity or vital energy." Mr Lister's statement is just the reverse, that in inflammation the tissues experience an impairment of functional activity or vital energy. In short, this section cannot have received at all the careful supervision and correction which is essential in a work of reference beyond all others.

Fortunately, the defects just referred to are confined to the first section of the volume; and we are glad to observe that the succeeding portions have been carefully and ably edited. And, although we have been disappointed in certain respects, we are not the less disposed to estimate very highly the importance of so extensive a collection of the observations of British and Foreign authors, brought within the easy access of the English reader. We approve entirely of the step which the Sydenham Society has taken in the introduction of year-books; and we are confident that, with some improvements, they will take their place among the most useful and popular works issued by the Society.

## LETTERS FROM VIENNA.—No. II.

EDITED BY DR MERCER ADAM.

What has occurred in Germany since my last letter reached you that can be said to interest the readers of a medical journal? We have seen German natural philosophers holding high festival, German Universities celebrating jubilees, the German nation joining heartily and zealously in these demonstrations, and German princes attending assemblages of scientific men striving earnestly after Light and Truth,—thus practically recognizing the mighty influence for good which science exercises alike on the destiny of states and the welfare of society at large. One of these German princes thus addressed his learned subjects on one of these occasions:—"I know well how to appreciate the value of science; and I am firmly convinced of the truth of your words, that it is only by the cultivation of science, that a state can prosper." These words bespeak the lofty triumphs of science, and promise the richest rewards to its disciples; and, spoken as they were by one of the highest princes, they seem to offer the assurance of a solid basis for society. When, therefore, after expressing such noble sentiments, the Prince continued—"And should I again be compelled to call the youth of my people to arms, for the defence of Right and Justice in evil times, I feel well assured that you, gentlemen, will powerfully support me by your influence, as your predecessors did, in the beginning of the present century"—need we wonder the air resounded with enthusiastic shouts of "We will!"? You see Germany awakes once more, and these honest words will ring through the world. The pioneers of science and intelligence in a land resemble the nucleus of a large crystal—the masses rally round them, well knowing that the man of science is the man of truth; that the true *majestas populi* is his unselfish aim; and that he only seeks Truth, and is restless till he finds it. Let the great be ever thus foremost in assisting, by their personal influence, in the spread of true ideas and noble thoughts, and they will gain for themselves more homage than mere "pomp and circumstance" can ever command, and they will reap lasting benefit to themselves and their states. But enough concerning the present relations of the state to science in Germany.

I am happy to tell you that the grand meeting of the Association of the German Natural Philosophers and Physicians, which was held at Königsberg in the end of last September, was very satisfactory and successful in every respect. The old veterans of science displayed as much zeal and perseverance in the cause as in the days of yore; and we hailed with pleasure a large accession of talented and promising younger men. Although there were not many new discoveries communicated, the old ones were thoroughly "ventilated" in every possible way, and illustrated by manifold carefully-performed experiments and observations. In our special department of science, experimental physiology and pathological anatomy continue to be prosecuted in Germany with ever-increasing pleasure and success; but, as regards the advance of therapeutic medicine, I must confess that I look with more hope towards the west than to our colleagues here at home. When I mention the well-known and honoured names of Virchow, Traube, Von Wittich, Remak, Von Siebold, Von Patruban, and Burdach, as ornaments of this association, I need hardly say more as to its thorough efficiency.[1]

Since the conclusion of the holidays the medical societies in Vienna have resumed their former activity. I will pass over many of the less interesting subjects which have been brought before them, in order to tell you something of a communication made to the Royal Society of Physicians by Dr Pollak, the private physician of the Shah of Persia. This gentleman read a very remarkable paper "On 158 Lithotomy Operations performed in Persia between November 1852 and June 1860." During the reading of the communication all the numerous calculi, which he had extracted, were exhibited in the rooms of the Society; and seldom has greater interest been excited among the profession than on this occasion. Dr Pollak describes calculous disease (Lithiasis) as being very common in Persia, especially in those provinces which were formerly known by the names of Media and Hyrcanium; and also in Azerbijan, Tabriz, Hamadan, Kaswin, Teheran, Koom; and near the Caspian Sea, in Talish, Ghilan, Resht, Masanderan, Demawend, and Shahrud-Bustam. It also prevails to the south of Koom, in Kashan, Ispahan, Ramish, and Shiraz. In Persia, lithiasis is commonly confounded with gonorrhœa; and a patient, on presenting himself, usually says, "Susanek darem" (I have gonorrhœa). Pollak told an amusing story of a Persian physician, who, when asked by the Shah whether he could not cut stones out of the body like the German doctor, replied,—"May it please your Highness, we never resort to such extreme means; we possess medicines which make them pass in the water."

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[1] The eminent Professor Rathke, who was to have officiated as President of one of the sections at Königsberg, died suddenly on the 15th September, on the day before the Association's first meeting. Professors Wittich and A. Wagner acted as Presidents of sections. Among those who were present, and took part in the proceedings, were—Halla, of Prague; Von Siebold, of Munich; Schultz-Schultzenstein, Virchow, Gurlt, Traube, etc., from Berlin; Pollak, of Teheran; and Dr Clark, of Massachusetts, U.S.—*Ed.*

As regards the etiology of lithiasis, Dr Pollak attributes it greatly to the frequent use of milk diet, especially of sour milk, which is eaten and drunk in every form in Persia; and also to the immoderate eating of sour, unripe fruit. He considers the large quantity of rice which is eaten to be another cause; and, he is of opinion that stone is less likely to occur in those who use flesh diet and drink wines containing a fair proportion of alcohol. In Persia the people chiefly live on vegetable food, and only the upper classes drink wine. He says that stone in that country appears to be quite unconnected with gout or hæmorrhoids; for gout is a very rare disease in Persia, and the patients who came under his care were principally young people. That a purely vegetable diet has some influence in producing stone seems further proved by the fact that, in Persia, calculi are frequently found in the kidneys and bladder of the mountain sheep. Men are more frequently the subjects of lithiasis than women; and the disease is rarely seen among the Jews and Armenians, Pollak having only noticed four cases among these tribes, in three of which he operated. He never saw negroes affected; and only in three cases observed stone among the children of the mixed Mongolian races. Rich and poor alike are subject to the malady; but by far the greatest number of cases occur during the early period of life. Of the 158 patients on whom Pollak operated, 69 were between the ages of 1 and 7 years, 53 between 8 and 14, 9 between 15 and 21, 16 between 21 and 50, and 11 above 50. He attributes this great prevalence of the disease in childhood to prolonged lactation; for, in Persia, infants are usually suckled for two years, and often for a longer time, by the rich inhabitants. Occasionally there appears to be a hereditary predisposition to the disease. Pollak operated on two brothers, whose uncle and nephew had both had stone, and other members of whose family were known to have suffered from calculous affections. The lateral operation was usually performed (in 121 cases); and Pollak only twice made the incisions from the rectum, where calculi, the size of a pipe-head, were impacted in the prostate. All his operations were performed *sub jove*—in the open air—beneath the shade of a tree or of a verandah. *He never operated in a room.* He almost invariably used chloroform as an anæsthetic. In 147 cases he found only one calculus in the bladder; but once there were as many as six, in two cases four, and in eight cases two stones. Of the 121 patients who had the lateral operation performed, 114 recovered and 7 died. In two of the cases the wounds healed by the first intention, and were able to be "sent to the bath" (the Persian expression for complete recovery) at the end of the sixth day. When the incisions united by suppuration, the wound was generally quite healed by the fourteenth or fifteenth day. Surgical fever was rarely seen; and the Doctor never had any occasion to restrict the diet after the third day. Children used to get up on the fourth or fifth day after the operation, and play about on the roofs of the houses. So favourable have been Pollak's results, that he said that lithotomy among young people in Persia was no more dangerous than paring the nails! He ascribes the unparalleled success which has attended his cases to the following circumstances:—1st. The sound constitutions of the patients;

2d. The operations being invariably performed in the open air, and the after-treatment being conducted either out of doors or in a chamber with open doors and windows; 3d. The absence of erysipelas; 4th. Dressing the wounds with fine cotton instead of with charpie; 5thly. His great experience in performing the operation.[1]

Most of the calculi were analysed by Professor Kletzinsky, who found them composed of uric acid, oxalates, and triple phosphates. Dr Pollak has earned the hearty thanks of the whole medical profession by his very able communication.

Our celebrated anatomist, Professor Hyrtl, has just published a new work of 762 pages, *On the Application of Practical Anatomy to Post-mortem Examinations; and on the Best Methods of Preparing Anatomical Preparations.* Every one who has seen Hyrtl's magnificent injections, and who is aware of the eminent services which he has rendered to anatomical science, will eagerly possess himself of this volume, and will be delighted with its contents. It is with much regret, however, that I call the attention of your readers to the following words, which occur in the Professor's preface:—"For thirty years no treatise on practical anatomy has appeared in Germany, while, during this period, a whole library has been published on the use of the microscope. This is a sign of the times, and one not to be lightly disregarded. My apology, that the present work forms an exception to the usual custom, must consist in the fact that it has been written for a livelihood" (*welches nach Brod geht*). I trust that, since this eminent man is under the necessity of making this statement, his adventure may be abundantly profitable; and that, ere long, a copy of his work may be found on the table of every well-educated physician and student of medicine, not only in Germany, but throughout the whole world. Hyrtl is, and has been for years, one of the brightest ornaments of our Vienna medical school; and, I doubt, if there is any man in all wide Germany who could replace him were he to become lost to us. I trust, therefore, that the appeal he now makes to his scientific *confrères* may be answered by them in a liberal manner.

I hear that the Hungarian University of Pesth, which was closed by the Government, will be reopened immediately. When it was shut up, the students of Cracow invited those of Pesth to come to Cracow to continue their studies. This emigration of the students will now be unnecessary, but they appreciate highly the kindness of the offer. The lectures at Pesth will be delivered in the Hungarian language; but, it is much to be feared, that the teachers who may be appointed will be so inexperienced in the dialect as to be unable to convey instruction in the national tongue, without the interests of science suffering greatly in their hands. I am the more confirmed in this opinion, because it is currently reported that the religion of the candidates, for the professorships, will have more to do with their appointments than their qualifications for the offices. I have heard to-day that many of the professors will be allowed to lecture in Latin, as was usual in 1848. The Hungarian nation has not retrograded of late years, but has kept pace with the times. It possesses a plastic language, which has been greatly developed and improved within the last twenty years. The Hungarian race is not deficient in talent; for many of the most renowned men in Germany, and many of the most eminent of her professors, are of Hungarian origin. One of them, Professor Semmelreich, has just published a work on puerperal fever, in which he has embodied the results of his great experience, and has treated the whole subject in an admirable manner. All prosperity to this brave nation.

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[1] On the 21st May 1859 he operated on *three* cases by the lateral method. Wattman, who was formerly Professor of Surgery in Vienna, once performed *seven* lithotomy operations in one day.

The Government has again invited civil surgeons to volunteer for service in the army hospitals, owing to the scarcity of military surgeons, as was formerly the case during the late war. I hear that many civil surgeons have applied for these appointments. Although the emoluments offered cannot be supposed to satisfy the just expectations of our medical men, the invitation will test the patriotism of the profession. I only hope that the Government bread may not leave a salt taste behind; and that, after rendering their services so willingly, the poor doctors may not be ungraciously forgotten afterwards.

My letter has exceeded its intended limits, so I must conclude. I have yet much to say, but reserve it for my next epistle.

VIENNA, 14*th November* 1860.

# Part Third.

# PERISCOPE.

## QUARTERLY REPORT ON PHYSIOLOGY.

BY WILLIAM GILCHRIST, M.D.

### THE NERVOUS SYSTEM.

### NEW RESEARCHES ON THE STRUCTURE OF THE SPINAL CORD. BY B. STILLING.

At the conclusion of his ponderous work, Stilling gives the following as the condensed result of his investigations. Each lateral half of the spinal cord is composed of—(*a*) two columns of larger and smaller nerve cells; (*b*) of nerve fibres which run in different directions, and have the following points of origin—1, from the brain, terminating in the spinal cord; 2, from spinal ganglia, terminating either in the spinal cord, or merely passing through it and out of it by the anterior nerve roots; 3, from nerve cells, going out by anterior nerve roots, or remaining in the cord as commissural fibres.

Stilling arranges the fibres going from each of the nerve cell columns in the following categories:—

(*a*.) From the anterior nerve cell column.

1. Fibres which pass into the anterior nerve roots in a horizontal, or almost horizontal, direction. The cells constitute the points of origin of the anterior nerve roots, as the cells of the spinal ganglia do those of the posterior roots.

2. Fibres which run obliquely downwards, for a greater or less extent, through the grey and white anterior columns, to pass over into the nearest or into a distant anterior spinal nerve root.

3. Fibres which run obliquely upwards, to a more or less distant nerve root.

4. Fibres which go in an irregular course through the anterior or posterior commissure, and unite with nerve cells, and, through these, with nerve fibres of the same or of opposite halves of the spinal cord.

5. Fibres which enter in different directions into the white anterior or lateral columns, assume the direction of the long axis of the cord, and run continuously upwards to the brain. These constitute the principal part of the white anterior columns and of the anterior part of the white lateral columns, being the intermediary fibre system between the brain and the anterior nerve roots. At the same time, and in mounting upwards from the cells, they represent the oblique fibres of the anterior and lateral columns.

6. Horizontal fibres running backwards, and entering, by a transverse or oblique course, through the grey posterior horns and the posterior columns into combination, directly, or through the intervention of cells, with the fibres of the posterior nerve roots.

7. Fibres which run straight or in a meandering manner downwards, and connect the more or less distant groups of nerve cells. These constitute (with the fibres of the next category) the principal part of the nerve fibres peculiar to the anterior horns.

8. Fibres which run straight or meandering upwards in the anterior horns, and connect cell groups.

(*b.*) The posterior nerve cell columns. The fibres going from these may be classified according to their direction, in the following manner:—

1. Fibres course horizontally backwards, and enter through the grey posterior horns into the white posterior columns, and through these and the posterior portions of the lateral columns, as primitive fibres of a posterior nerve root, into the cells of the spinal ganglia.

2. Fibres run in different directions through the grey horns, enter the white posterior columns, and run for a greater or less extent upwards to the roots of more highly situated nerves.

3. Fibres which hold the same relations to nerve roots *below* their point of origin.

4. Fibres which, after traversing in different directions the posterior grey horns, bend upwards in the posterior white columns or the posterior part of the lateral columns, and extend continuously to the brain. These fibres form the chief mass of the longitudinal fibres of the posterior half of the spinal cord.

5. Fibres which connect cells of the posterior columns lying at different levels, and also these with cells of the anterior cell-column of the same or of the opposite side of the spinal cord. These fibres constitute the chief part of the primitive nerve fibres peculiar to the grey posterior horns, as also a part of the commissural fibres.

All these fibre categories of the anterior and posterior cell columns are not so to be considered as if each cell was connected with fibres of one category only; each cell is rather to be regarded as giving out or taking up fibres which run in perfectly different directions. The processes of the smallest nerve cells of the gelatinous substance, which cannot be pronounced as perfect primitive nerve fibres, are not to be taken into this consideration.

Stilling divides the primitive nerve fibres of the cord into *local fibres*, which are confined to one nerve territory; *provincial* fibres, which extend into the territories of from one to five nerves, lying at a higher or lower level; and *universal* or *cerebral* fibres, which extend from a province to the brain. In all the three columns the fibres run transversely, obliquely, or longitudinally.—*Henle und Meissners Bericht*, 1859.

### ON THE TRANSMISSION OF SENSITIVE IMPRESSIONS IN THE SPINAL CORD.

BY E. BROWN-SEQUARD.

In some new experiments, B.-Sequard seeks to support the exactitude of his expressed opinions on the transmission of sensitive impressions:—1. That the posterior columns of the spinal cord do not transmit any part of the sensitive impressions to the brain, but that the central grey substance fulfils this function. 2. That the conductors of the sensitive impressions of the limbs and trunk decussate in the spinal cord, and not in the brain, as some have affirmed. In a rabbit, B.-Sequard divided all the anterior roots of the nerves of the posterior extremities, so that in these no movement, either voluntary or reflex, could occur. He then allowed the animal to remain untouched for an hour or two. Upon examining the sensibility of the posterior limbs, he found that it was much increased; that the least irritation caused pain. The one half of the cord was then cut through, with the result that a *complete paralysis of sensation* occurred on the *opposite* side, whilst the *exalted state of sensibility* remained on the *same* side. From this experiment the author infers not only that the conductors of sensation decussate in the cord, but that these conductors cannot be contained in the posterior columns, because in these no anatomical decussation has been demonstrated. Further, in regard to Schiff's opinion, that the posterior columns are the conductors of tactile sensations, and that the grey matter conducts painful impressions, the author finds that impressions of touch, tickling, and probably also of heat and cold, are also conducted when the spinal cord is divided on the same side as that on which the impressions are made. Finally, when all the parts of the cord are cut except the posterior columns, tactile as well as the other kinds of sensibility are lost.—*Journal de Physiologie.*

[From some experiments made along with my friend, Dr Sanders, I can fully corroborate the fact, that the posterior columns are not the conductors of sensitive impressions. We found that, after a very deep section of the cord, through the posterior and lateral columns and about three-fourths of the grey matter, sensitive impressions were still conducted to the brain: this must occur either through the anterior grey cornua or the anterior columns. From the plentiful anastomoses of the cells in the grey matter, sensitive impressions may readily be transferred from their proper channel on one side of the section to that on the other. We also found that, on dividing a lateral half of the cord, hyperesthesia took place behind the section on the same side, whilst entire loss of sensibility was manifest on the other,—thus proving a decussation of sensation in the cord.—W. G.]

### PHYSIOLOGICAL EXPERIMENTS ON THE TRANSMISSION OF SENSIBILITY AND OF MOVEMENT IN THE SPINAL CORD. BY M. VAN KEMPEN.

From a set of numerous experiments on different classes of animals, M. Van Kempen draws the following general conclusions:—

1. That in vertebrate animals, the transmission of voluntary movement is *direct* in each half of the spinal cord, and that it is in part *crossed* in the cervical region.
2. That the transmission of sensibility in the spinal cord is *crossed* in the whole length of this organ.—*Journal de Physiologie.*

### ON THE CROSS ACTIONS OF THE SPINAL CORD. BY A. VON BEZOLD (*Zeitschr. für wissen*, Zool. ix.).

From an extended inquiry on different classes of animals, Bezold concludes that the transmission of voluntary movements is direct, that the vaso-motor fibres also pursue a direct course, and, in regard to sensitive fibres, though he does not express a positive opinion, he is inclined to believe that they do not decussate in the cord.—*Henle und Meissners Bericht*, 1858.

## RESEARCHES ON THE INTIMATE STRUCTURE OF THE BRAIN. BY L. CLARKE.

### *The Medulla Oblongata.*

The anterior pyramids are found to be composed of *four* orders of fibres :—

1. Decussating fibres from the lateral columns, forming their chief bulk.
2. Decussating fibres from the posterior columns and posterior grey substance, chiefly at the upper part.
3. Decussating fibres from the anterior grey substance.
4. Non-decussating fibres of the anterior columns, separate on their outer side, and on their inner side incorporated with those which form the decussation.

In the olivary bodies in man there are two layers of fibres, a transverse and a longitudinal; the former in part belong to the arciform system, the latter are continuous with the antero-lateral columns. A broad transverse commissure unites the two bodies. The corpus dentatum consists of small cells giving out one to three or more processes. The fibres within the sac of grey matter originate in the cells. In mammalia generally, there is to the outer side of each olivary body, another vesicular column, of which the analogue may be found in the human medulla. As the fibres of the lateral columns cross over to the anterior pyramids, the posterior cornua sink, as it were, forwards, whilst the gelatinous substance, by gradual increase of bulk, reaches the surface, and forms the grey tubercles of Rolando. At the same time, and close to the posterior median fissure, the grey substance is raised into a small conical projection, from which a network of blood-vessels and fibres extends backwards into the posterior pyramid. This projection of grey matter contains round pyriform or irregular cells, which give off one or more processes. Further outwards, another but larger projection, and another network extends backwards into the restiform body, containing cells of the same character, but of superior size. These additional productions may be called respectively the *post-pyramidal* and *restiform* ganglia. As the medulla ascends the root of the posterior cornu, and the whole of the anterior cornu, are gradually spread out into a beautiful and complicated network, containing cells which communicate with the longitudinal bundles of the white columns enclosed in their meshes. The posterior-pyramidal and restiform ganglia continue to increase in size, as also do the terminal tufts of the posterior cornua, which, like the former, are traversed by an extension of the network, and interspersed with cells. At the lower extremity of the olivary bodies, the decussation of the anterior pyramids is very much reduced. In front and at the side of the central canal, a new cell-group appears—the nucleus of the hypoglossal nerve, and behind and on each side of the canal appears the nucleus of the spinal accessory nerve, which is connected with its fellow of the opposite side at the bottom of the posterior fissure, by a transverse band of fibres —the continuation of the posterior commissure of the medulla spinalis. Some of the roots of the spinal-accessory nerve bend forwards into the hypoglossal nucleus, and in part join its fibres, to decussate through the raphè with those of the opposite side.

The vagus nerve arises from a continuation of the spinal accessory nucleus, and on its way outwards passes through the terminal tufts of the posterior cornu, or the so-called gelatinous substance. The vagal and spinal accessory nuclei, after appearing in the fourth ventricle, and diverging so as to expose the hypoglossal nucleus, sink abruptly beneath a new mass of vesicular substance—the auditory ganglion. It commences by a point on the outer side of the vagal nucleus, with which it is intimately connected, and is developed from the post-pyramidal ganglion. Its cells are various in shape, and as they are developed from the inner part of the posterior pyramid, the outer side of the latter undergoes a remarkable change of structure, and becomes the chief origin of the *anterior division* of the auditory nerve, which in its course outwards runs between the restiform body and the gelatinous substance or posterior cornu.

The posterior division of the nerve winds transversely inwards over the restiform body to reach the auditory ganglion. Connected with the auditory nerve is the trapezium, which contains a remarkable sac, resembling that of the olivary bodies. The facial nerve passes through the trapezium to the fasciculus teres, which contains a mass of cells through which it spreads, exchanging fibres with the abducent nerve, which arises from the same nucleus. The glosso-pharyngeal nerve passes out in several bundles through the gelatinous substance or posterior cornu, *in* which it forms a plexus with longitudinal fasciculi of fibres, which may be traced upwards to the large root of the fifth nerve. In the raphè there is a very complicated decussation between the posterior halves of the medulla on the one hand, and on the other, between each of these and the olivary body of the opposite side.—*Proceedings of the Royal Society.*

### EXPERIMENTAL RESEARCHES ON THE MEDULLA OBLONGATA.

BY E. BROWN-SEQUARD.

The principal object of this paper is to show that, in removal of the medulla oblongata, the effects—arrest of the heart's action, of the respiration and agony without convulsions—are due rather to irritation than to absence of the organ. The author draws the following conclusions:—

1. Irritation of the medulla oblongata, and of the neighbouring parts (pons, cervical part of the cord), can suspend or suddenly diminish the force and the frequency of the cardiac and respiratory movements, in the same way as irritation of the vagi.
2. It is not to the absence of this organ, but to the irritation produced in its removal, that the suspension or diminution of the cardiac movements is due.
3. It is in part also to the irritation produced in removing the medulla oblongata entirely, or its central parts (the vital nucleus), that the sudden suspension of the respiratory movements is due.
4. It is also to an irritation, and not to the absence of the medulla, that we are to attribute the absence of convulsions (the animal dies by syncope, not by asphyxia).

These conclusions show that it is necessary entirely to reject the supposition that the medulla oblongata is the seat of a pretended vital force, or, as it has been expressed, of a *force propre de la vie.* They show also that the physiology of the medulla, as a respiratory centre, must be entirely remodelled.—*Journal de Physiologie.*

### RESEARCHES ON THE PHYSIOLOGY AND PATHOLOGY OF THE PONS VAROLII.

BY E. BROWN-SEQUARD.

These researches consist in the examination of the symptoms and of the morbid appearances of a series of well-observed cases of lesions of the parts at the base of the brain. As the subject is one which, in a diagnostic point of view, is interesting to the practical physician, we shall give the more important symptoms, lesions, and remarks upon each case.

CASE I. *Symptoms.*—Pains extending over face and head, of a very intense character, and latterly taking the form of general hyperesthesia,—paralysis of movement in trunk and limbs, most marked on *right* side; loss of sight, *first in right*, then in left eye, pupils dilated; deglutition difficult, often impossible; head bent, and body curved to the right; death from pneumonia.

*Morbid Appearances.*—A tumour, of the size of a hen's egg, producing destruction of the *left* restiform body; alteration by compression of the rachidian bulb, of the pons, and of the corpora quadrigemina, more especially on the *left* side.

*Remarks.*—This case shows that destruction or lesion of a corpus restiforme does not produce anæsthesia, which it would were it true that these bodies contained the fibres for the transmission of sensation. The parts most affected by the tumour were the restiform body, the middle cerebral peduncle and the corpora quadrigemina on the *left* side; the increased sensibility was most marked on the *right* side. This is in accordance with experiments in animals, which prove that, whilst in the spinal cord a lesion of the posterior columns produces hyperesthesia behind on the *same* side, a lesion of the parts above named produces increase of sensibility on the *opposite* side. The effect on sight was in this case likewise *crossed*, and was due to the injury of the corpora quadrigemina. In regard to hyperesthesia, B.-Sequard remarks, that when a nerve is compressed in its course, pain is felt at its periphery; but when the posterior columns of the spinal cord are irritated or compressed by a fracture or luxation of the vertebræ, pain in the periphery is not generally felt, but when pains do occur, they depend on a meningitis (and, consequently, on an irritation of the nerves), or on a myelitis. The grey matter, in its normal state, does not produce pain when irritated; but, when it becomes inflamed, sensations are produced which appear to come from the periphery. In the above case it is probable that the general hyperesthesia was due to irritation by inflammation of the grey matter in the medulla and the pons.

Case II. Diminution of sensibility and of movement in *left* extremities; facial paralysis on the *left* side, preceded by increased sensibility; sense of taste impaired; deglutition difficult; the right side of the body bent in the arc of a circle; the heart occasionally ceased to beat. A tumour was found pressing upon and producing atrophy in the middle and posterior lobes of the brain (their inferior surface), the *left* peduncle of the brain, the *left* peduncle of the cerebellum, and the *left* side of the pons Varolii. In accounting for the *direct* paralysis of the face in this case, B.-Sequard remarks, that lesions of the cerebral peduncles and of the pons produce their effects on the opposite side of the body, and that in this case the direct paralysis was probably due to the lesion of the crus cerebelli. The cerebellum also produces paralyses of this species (on the same side); but, as this organ is neither the seat of the will, nor of the sensorium, nor a place of passage for the conductors of sensibility and movement, it cannot possibly cause an immediate paralysis. The cerebellum and its peduncles have a marked influence on the nutrition of the brain; and this influence is crossed, as the facts reported by M. Turner, in his interesting work upon *Atrophy of Parts of the Cerebrum*, show. It is, therefore, probable that the direct paralysis in cases of lesion of the cerebellum, or its peduncle, is in reality a crossed paralysis, dependant upon disturbance in the nutrition of some points of the cerebral hemispheres. B.-Sequard has found that, by simply pricking the pons, a marked diminution of the cardiac pulsations was produced. This symptom, as also the curvature of the body in the form of an arc, a sensation of cold in the face, a state resembling drunkenness, pallor with occasional sweating of the face, difficulty of deglutition and of speech, and death by pneumonia, are characteristic of lesions of the pons Varolii.

Case III. Complete paralysis of motion and of sensation on the *left* half of the body, and on the *right* half of the face; loss of hearing in *right* ear; inflammation and ulceration of the cornea of the *right* eye; mastication and deglutition difficult; tongue, when protruded, inclined to the right. On examination, the *right* middle peduncle of the cerebellum and a portion of the *right* side of the pons were softened; the medulla oblongata was also softened on the *right* side, the anterior pyramids being reduced to a pulp; the fifth, seventh, eighth, and ninth nerves of the right side were compressed. This case shows—1st, That decussation of the sensitive fibres occurs in the cord; 2d, That the decussation of the anterior pyramids contains all the conductors of voluntary movement contained in the trunk and limbs; 3d, That, consequently, the fibres which decussate in the isthmus of the encephalon are neither the conductors of sensitive impressions nor of voluntary movements; 4th, The medulla oblongata, like the pons, has on each side a crossed action; 5th, The restiform bodies and the posterior columns of the cord do not contain the elements which conduct sensitive impressions; for, if they did, we should in this case have had the paralysis of sensation *on the same side* as that of the lesion, no decussation being known to take place either in the posterior columns or in the restiform bodies.

CASE IV. Complete paralysis of movement in the upper and lower extremities of the *left* side; facial paralysis on the *right* side; tongue, when protruded, inclined to the *left;* sensibility entire in every part; subsequently contraction of and hyperesthesia in the paralysed limbs. On examination after death, there was found a hæmorrhagic clot of the size of an almond in the *anterior* part of the pons, on the *right* side. On this case M. Brown-Sequard makes the following observations:—1st, The facial paralysis was in this case direct; therefore, if the decussation of the facial nerves takes place principally in the pons Varolii, it is not in the anterior part of that organ. 2d, The tongue, when protruded, inclined to the left side. This fact tends to prove the decussation of the hypoglossal fibres to be immediately after their entrance into the medulla oblongata, and that the fibres thereafter ascend to the brain by the anterior parts of the pons Varolii. 3d, The preservation of sensibility proves that the seat of lesion is not the principal place of passage of the sensitive fibres. 4th, The pains and contraction in the paralysed limbs were due probably to inflammation in the neighbourhood of the hæmorrhage. 5. In regard to the question of the sensibility of the pons, it would appear from this case that, in its anterior part at least, it is not sensible.

CASE V. Facial paralysis on the *left* side; anæsthesia of the *right* upper and lower extremities; tumour of the size of a nut in the substance of the *left* side of the pons; softening of the tissues around, extending towards the cerebral peduncles and the posterior part of the *right* optic thalamus; the anterior fibres of the pons were healthy. The conclusions to be drawn from this case, when taken along with the preceding one, are, that the fibres for conveying the orders of the will to the muscles are contained in the anterior parts of the pons; that, when to the consideration of these two cases that of Case I. is added (in which the posterior parts of the pons were destroyed, and sensibility preserved), it appears probable that the conductors of sensitive impressions pass chiefly, if not entirely, through the central parts of the pons.

CASE VI. Numbness, contraction, and paralysis of the *right* arm were the chief symptoms. On examination, an exostosis was found compressing the middle cerebellar peduncle and the pons on the right side. Brown-Sequard regards this as another of his sympathetic or reflex cases of paralysis, analogous to the cases in which other forms of nervous disease, such as epilepsy, mental alienation, etc., are produced by an irritation acting on the periphery of the nerves, or on the brain or its membranes. In opposition to the opinion that the paralysis is caused by a lesion of the fibres conducting a special influence from the muscles to the cerebellum (Carpenter), or from the cerebellum to the muscles, the author refers to the fact that the result of a lesion of the cerebellar peduncles differs in different cases. Now, if the hypothesis that the cerebellar peduncles contained fibres serving for voluntary movement was correct, the result of a lesion ought invariably to be a paralysis of motion on the same side. This is not the case.

The next two cases are cited as examples of paralysis from irritation rather than from absence of action. From the ninth case B.-Sequard draws the following conclusions:—1st, The transmission of sensitive impressions does not take place through the anterior part of the pons. 2d, The vaso-motor nerves ascend to the pons, but their decussation takes place before they reach it. 3d, The voice may remain unaffected even with a considerable alteration of the pons.—*Journal de Physiologie.*

### CRITICAL AND EXPERIMENTAL RESEARCHES ON THE FUNCTION OF THE BRAIN.

BY R. WAGNER.

After destruction of the surface of the cerebellum in pigeons, Wagner observed that there was a tendency to atrophy and absorption of the white matter, which might go on to entire disappearance of the cerebellum down to the grey nuclei of the cerebral peduncles (the analogues of the corpora dentata cerebelli). Small losses of substance, or removal of superficial slices of the cerebellum, with protection of the deep, anterior, posterior, and lateral convolutions, a loss of substance of 70–80 mgrm., often produced no disturbance at all, provided that tearing (zerrungen) was as much as possible avoided. When destruction of deeper parts was effected, disturbances in movement occurred, which, however, disappeared after a time, ranging from hours to days. Wagner (as also Schiff) believes that this disturbance of the "co-ordination of movement" is not dependent on the cerebellar loss of substance, but upon the tearing of more deeply situated parts, in the performance of the operation. When he succeeded in keeping alive, for weeks or months, pigeons whose cerebellums were completely or in great measure destroyed, Wagner observed three phenomena: viz., an increasing tendency of the posterior extremities to extension, which was made particularly manifest in a reflectory manner, just as in strychnine poisoning; further, an increasing contortion of the head and neck, so that the latter describes a spiral; lastly, a peculiar quivering of the greatest part of the muscular system, resembling paralysis agitans, and increased on touching the animal. After deep injury of the cerebellum, vomiting was a frequent symptom, also thin watery fæces. Both of these symptoms also occur in deep injury of other parts of the brain. Digestion is by no means quite suspended after deep injury of the cerebellum, but goes on more slowly and imperfectly. In regard to other general disturbances, of nutrition, of the activity of the skin, heat, etc., Wagner feels doubtful if they depend directly upon the injury of the cerebellum, but holds it as probable that a part of the vaso-motory nerves is represented in that organ. As to the generative system, Wagner could observe no influence of the cerebellar injuries upon it.

In mammals Wagner found confirmed the fact, that mechanical irritations of the cerebellum call forth movements in the organs of the vegetative sphere, in the stomach, intestines, urinary, and sexual organs, also changes in the heart movements. Wagner, from his clinical experience and knowledge of diseases or injuries of the cerebellum, observes that disturbance of equipoise and imperfect staggering motion occur frequently in men with diseased or deficient cerebellums. Further, that rotatory movement may also be observed in such cases. Amongst the most frequent symptoms are paralysis of motion in the extremities, generally in those of the opposite half of the body, or paresis on both sides. It is questionable if these paralytic affections are due to the cerebellar lesion, or are the consequence of pressure on other parts. Paralysis of sensation does not occur, but cramps of the extremities and epileptic symptoms do,—the first in cases of further complication, the last after various injuries of the brain; also, general or partial quivering. Vomiting of a periodic character, and symptoms of disturbed digestion, are very frequently present. Disturbances of sensibility, pains, particularly in the posterior parts of the head and neck, Wagner recognises as the most constant symptoms of diseases of the cerebellum. On the whole, he finds a great agreement between the symptoms in man, in other mammalia, and in birds, in regard to the cerebellum, which may therefore be considered as a physiological equivalent in warm-blooded animals, without any detriment to the modifications founded upon particular relations of organization.—*Zeitschr. für rationelle Medicin.*

### NOTE UPON SOME EXPERIMENTS UPON THE CERVICAL PART OF THE SYMPATHETIC OF AN EXECUTED CRIMINAL. BY R. WAGNER.

The head of a woman, aged 28, was taken to Professor Wagner's laboratory. The knife had cut through the sixth cervical vertebra, and the sympathetics had been divided an inch and a quarter below the superior cervical ganglion. The eyelids being closed, electric irritation (supplied by a magneto-electric rotation apparatus) was applied to the cervical part of the right sympathetic; the eyelids slowly opened, three or four seconds after the rotation began, and continued opening slowly until the vertical diameter of the space between the lids measured nearly 8 millimetres. The pupil was also seen to dilate. The experiment was repeated on the other side, and succeeded, until three-fourths of an hour had elapsed since decapitation. When it became impossible to affect the eyelids through irritation of the cut nerves, Wagner obtained a feeble opening by applying electricity to the ganglion itself.

There can be no doubt that in these experiments the opening of the eyelids does not depend upon the levator palpebræ superioris, as has till recently been supposed; for the movement has all the characters of the action of organic muscular fibres, according to the laws of Weber. Thus, an interval of time elapsed between the commencement of the irritation and the contraction, and the latter persisted when the irritation had ceased. When the platinum plates of the reophoric apparatus penetrated deeply into the muscles of the neck, and excited the branches of the hypoglossal, facial, and trigeminal nerves, powerful tremulous contractions in the muscles of the chin, mouth, nostrils, jaws, and in the orbicularis palpebrarum, ensued. The grimaces long known as being produced in galvanic experiments are quite different from the slow opening of the eyelids on irritation of the sympathetic.

These researches on man are important, as corroborative of the experiments on animals, long known to physiologists.—*Zeitschr. für rat. Medicine.*

### ON THE REGENERATION OF NERVES. BY OTTO HJELT.

In this paper, which is accompanied by very beautiful illustrations, the author does not agree with Waller in believing that the process of regeneration in divided nerves is to be regarded as a new growth of nerve tubes, proceeding from the central end to the finest peripheral branches. He finds the process to consist in an excessive production of nuclei in the central as well as in the peripheral portion of the injured nerve. This nuclei-development causes the swellings upon the ends of the divided nerves. The nuclei unite by processes so as to form a regular network of long rows of nuclei connected to each other. These nuclei belong to the connective-tissue lying between the tubes. All do not unite to form this network, but many undergo a process of fatty degeneration. The processes connecting the longitudinally-arranged nuclei become broader, their contours more distinct, and a differentiation of sheath and contents occurs. The nuclei now appear as varicose swellings on the young nerve tubes, whilst these become more and more indistinct. The contents are granular, and next the sheath of the tube a clear marginal layer is deposited. The same process occurs in both of the nerve ends, but it is most active in the central one. The author supposes that a great part of the old nerve tubes unite with these newly-formed fibres. He has never met with newly-formed fibres in the course of the peripheral distribution of nerves from which a part has been cut out; but he has seen primitive nerve fibres in a more or less advanced state of fatty degeneration. These latter fibres have probably not had their connection with the new fibres established. An exudation deposit Hjelt has never seen. The essential part of the process consists in an excessive formation of nuclei, a connective-tissue formation proceeding from the nuclei of the neurilema. "Since Virchow first proved that cell elements occur in the connective-tissue, he has not only described the changes which these may undergo without changing their essential character, but he has also shown convincingly that it is to these cell elements that new formations of different kinds owe their origin. The magnificence of this view lies in the conception of the connective-tissue being a constant and everywhere present formative source, from which the organism is in a condition to draw continuous material for its formative activity."—*Archiv für pathol. Anat. und Physiol.*

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## MEDICINE.

### TREATMENT OF PHTHISIS BY THE CHLORATE OF POTASH. BY DR FOUNTAIN.

Mr H——, aged 34, placed himself under my care early in November 1859. He had the appearance to every one of a man sinking under the influence of confirmed phthisis. To this he was predisposed from his father, who died young with this disease—mother still living and well. A gradually increasing cough and failing health had been gaining upon him for the past five years. Once during this period he had improved under the use of cod-liver oil and phosphate of iron. Free, and quite profuse, hæmorrhage from the lungs once, and slight traces of it a number of times during the past year. When he applied to me he was conscious of losing strength very fast. Marked emaciation, and unhealthy expression of countenance; very frequent cough, but seldom any expectoration; no appetite; respiration hurried and oppressed; pulse seldom below 90; moderate dulness on the right side, over the infra-clavicular region; no râles, but respiratory murmur indistinct and irregular. As he had once been benefited by cod-liver oil and the phosphate of iron, I first prescribed this same treatment, thinking it might again have a similar effect. This was continued faithfully for about two weeks without any material benefit, when I directed it to be discontinued, and prescribed the chlorate of potash alone, half an ounce daily. In less than a week he assured me that he felt a decided benefit from the treatment. The improvement continued steadily from this time, and he completely regained his health and strength in less than three months. *He took half an ounce of the chlorate of potash daily for six weeks*, and two drachms each day for the succeeding four weeks; since which time he has taken it only occasionally, and in smaller quantity. At the present time of writing (April 1860), he is actively engaged in business, in good strength and flesh, having no cough, except a trifle from a recent cold; complexion perfectly healthy, and appetite good. His own feelings and general appearance indicate a perfect restoration of health.—*American Medical Monthly*, Sept. 1860.

### MORTALITY PRODUCED BY EMANATIONS FROM PUTRID FISH.

The Committee for the inspection of insalubrious localities, instituted in terms of the law of April 13, 1850, and acting in concert with the "*Conseil de Salubrite*" of Paris, has already been productive of much good in the denser and more populous districts. At a late meeting, one of the members, M. Trelon, communicated a report regarding a house in the Rue Verderet; the cause of insalubrity, in this instance, being a dépôt of fish baskets, used for the conveyance of such provisions to the central markets. In like manner, on the present occasion, Dr Deville, inspector of deaths in the old fourth *arrondissement*, communicated to the Committee several observations of a similar nature, made by him during a period of service extending over a number of years. Two houses had been found by him to be remarkable for the mortality occurring in them,—one in the Rue de la Grand Truanderie, the other in the Rue Rambuteau; and on inquiry, he found that these houses, like the instance recorded by M. Trelon, were dépôts for fish baskets of the same nature. An odour of an altogether peculiar, acrid and fœtid kind was perceptible in their courts and staircases, and complaints about it had been made by the tenants. The matter was in this way referred for investigation to Dr Deville by the municipal authorities and prefect of police.

The mortality, especially among young children, was very considerable in the Grand Truanderie house, but was much more so in that of the Rue Rambuteau, where the cellars, the courts, and every corner of this large mansion, were found packed with fish baskets. Eighteen young children, in a population of ninety-two individuals, had died here in one year, mostly of chronic enteritis. These facts were laid by Dr Deville before Dr Tessereau, who had long practised in that arrondissement; and his experience entirely agreed with the opinion, that these houses were rendered thus unhealthy by the putrid emanations arising from the fish baskets stored in them. On the establishment of the central markets, these baskets were kept in cellars attached to the stalls; and since that time no bad effects had occurred.

The communication of Dr Deville appears interesting in a double point of view—namely, in a public, and in a professional aspect. The relation between the circumscribed epidemic influence attaching to these two houses, and the accumulation of fish baskets found in them, can scarcely be doubted; the coincident cessation of the disease with the removal of the baskets, and the absence of any other cause except their presence for the existence of such localized disease at all, appear to constitute sufficiently direct proof of the unwholesome character of such emanations. Moreover, these facts are curious in a scientific respect, as proving the deleterious influence of one particular kind of emanation; as, without altogether subscribing to the doctrine advanced by some authorities, to the effect that Indian cholera originated from the vast accumulation of somewhat similar organic matters (*produits organiques fluviatiles*) constantly polluting the shores of the Ganges, we can see the force of numerous cases which could be cited in support of the opinion advanced by these medical men regarding the emanations from putrid fish.—*Gazette des Hôpitaux*, Oct. 1860.

### ON THE PECULIAR ACTION OF DIFFERENT ANÆSTHETICS IN PRODUCING INSENSIBILITY.

At a meeting of the Academy of Sciences of Paris, on the 10th September last, M. L. Lallemand, in the names of M. Maurice Perrier, M. Duroy, and himself, read a paper on the action of alcohol and anæsthetics on the cerebro-spinal system, compared with the action on it of carbonic acid gas.

On the first employment of etherization, M. Fleurens had shown that ether and chloroform acted on the nervous centres in a successive and progressive manner, abolishing both the motor and sensory powers of the spinal marrow and nerves. Repeating these experiments, the authors found, that while alcohol and amylene, like chloroform or ether, abolish the sensibility and motor function of the spinal cord, the inhalation of carbonic acid or carbonic oxide gas leaves these functions intact until the moment of the animal's death. The first class of anæsthetics, such as chloroform, ether, amylene, act then directly and primarily on the nervous centres, in the substance of which they accumulate; but with regard to the second class, such as carbonic acid gas, the case is different.

The carbonic acid acts primarily, and in a special manner, on the blood, rendering that in the arteries of a venous colour: the oxide alters the condition and physiological properties of the blood globules. It thus appears that the phenomenon of *insensibility* following the employment of these gases, is only a secondary effect, consequent upon the altered state of the blood. And further, we thus see how this nervous function can only be exercised so long as the vital qualities of the blood maintain the efficiency of the nervous system; and how, when the vitality of the blood becomes depreciated, by its supply of oxygen being interrupted, anæsthesia results; which anæsthesia, however, is only an indication of imminent danger, and the close approach of death.

Thus, the one division of anæsthetics may be described as depressing and extinguishing nervous function by a progressive action, finally resulting in suspension of the respiration, dependent as that is on the medulla oblongata. They produce a positive and direct condition of anæsthesia, and a consecutive and indirect state of asphyxia.

The carbonic acid and oxide gases, on the other hand, alter the qualities of the blood, and so impede or arrest sensibility. They produce first a state of asphyxia directly; then a condition of insensibility, as the consecutive or indirect effect of this state. But in the animals experimented on, the motor roots of the spinal nerves, and the motor columns of the cord itself, still remained excitable on stimulation, as, on being irritated, convulsive movements followed, while none could be produced when the other class of anæsthetics were employed.—*Gazette des Hôpitaux*, Sept. 1860.

### SYPHILIS FROM VACCINATION.

The possible transmission of syphilis in vaccination, observed ever since that practice became common, much disputed, and alternately denied and admitted, seems now to be placed beyond all doubt. The discussions taking place in Germany and France, especially in the Societé de Chirurgie, the observations of MM. Ceccaldi, J. Lecoq, etc., were apparently sufficient to decide this matter, except that the conditions or circumstances under which such transmission took place were never very well cleared up; and it became a question, why, if syphilis were transmissible from an infected to a healthy infant, in this way, such an effect was so rare as to be quite exceptional. Now, however, by the recent researches of M. Rollet and Dr Alexandre Viennois, this difficulty seems also solved.

The observations of Dr Viennois, as embodied in a paper laid before a late meeting of the Academy of Medicine at Paris by M. Depaul, are too extensive to be given here at any length. We shall therefore limit our notice of them to their most important points.

When vaccination is performed on a syphilitic subject in whom the disease is only latent at the time, its development may occur under the influence of vaccination. In a number of cases this is exhibited in the occurrence of constitutional eruptions, such as those of a papular, vesicular, pustular nature, etc.—never as a chancre developed in the situation of the vaccine vesicle.

On taking the vaccine matter from a syphilitic subject and vaccinating a healthy subject with it, pure and free from admixture with blood, no consequence follows except the ordinary vaccine vesicle, without any syphilitic complication, either direct or indirect.

On the other hand, if with the vaccine lymph of a syphilitic subject a healthy individual be inoculated, and a little blood be at the same time introduced with the vaccine matter, both vaccination and syphilis may result—vaccination from the vaccine lymph, syphilis from the blood contained in it. In such cases, many of which have been collected by Dr Viennois, the vaccination, owing to its shorter period of incubation, is the first to be manifested; and then the syphilis appears at the point of inoculation in the form of an indurated ulcer resembling true chancre.

After the numerous and careful researches conducted by Dr Viennois, we can scarcely question the correctness of his views. Practically considered, they are of great importance; they point out the danger of collecting vaccine lymph from any suspicious sources—even of collecting it from apparently healthy subjects, if before the age at which hereditary syphilis may manifest itself; and when necessity compels us to do so, it shows that, at all events, the most scrupulous care should be taken not to draw blood. In any case, the author would denounce the practice of inoculating a healthy subject with lymph taken from one affected with syphilis.—*Gaz. des Hôpitaux*, Sept. 1860.

## MIDWIFERY.

### DEATH AFTER THE INJECTION OF AN OVARIAN CYST WITH IODINE. BY DR REINHOLD LÖWENHARDT OF PRENZLAU.

Mrs R——, forty-one years of age, the mother of several children, menstruating regularly, a midwife, and pursuing her laborious occupation with scarcely any intermission, came under my care two years ago on account of a very considerable enlargement of the abdomen, which did not cause her much inconvenience, and which was found on examination to depend upon the presence of an ovarian tumour. The tumour appeared to consist of a single cyst, to be non-adherent, and to be situated on the left side, although the patient persisted in ascribing its origin to the right side, to which she had repeatedly applied leeches on account of attacks of pain. I punctured the tumour four times at gradually diminishing intervals, with the effect of giving exit to a clear watery fluid, containing a large proportion of albumen; the more accurate exploration of the abdomen, which was rendered possible on these occasions, confirmed the previous diagnosis. The general condition of the patient during this time remained pretty satisfactory, although unmistakeable symptoms of anæmia had presented themselves.

Keeping in view what must be the ultimate result, and believing that this case was in every respect well adapted for being operated upon with a view to a radical cure, I proposed to the patient the employment of iodine injection; considering, from the accounts I had read of it, that it was the least dangerous of the means at my disposal to obtain the desired end.

The patient gave her consent, and after emptying the bladder and rectum, I chose as the point of operation the linea alba, halfway between the navel and the pubis,—the same point, in fact, where I had punctured on the former occasions. Any interference per vaginam was rendered impossible by a slight arching forward of the tumour in this situation.

About a fortnight before the menstrual period, I made a puncture with a straight trochar, the canula of which was two inches long, and scarcely two lines in diameter, and into which I introduced a horn tube one line in diameter, which projected an inch and a half beyond the canula. I drew off about ten quarts of fluid, when the belly fell into loose folds, and no more could be got out by pressure. Into the projecting end of the horn tube I then introduced a syringe, and very slowly injected a fluid consisting of two ounces of tincture of iodine, two ounces of distilled water, and ten grains of iodide of potassium. I only allowed the fluid to remain in the abdomen (which I rubbed gently to ensure the proper application of the injection) for four or five minutes, as from the entrance of the first drop there were manifestations of severe pain, coupled with repeated asseverations of a sensation of approaching death. This appeared to me the more extraordinary, as I knew that the patient was not an unusually sensitive person; nevertheless, consoling myself with what often happens in the case of the injection of hydroceles by the most skilful surgeons, and with certain reminiscences of West's excellent book on Diseases of Women, I allowed the solution of iodine to flow out as completely as possible, and removed the canula.

Even although the countenance remained pale, the sense of impending death continued, the pain did not abate, and the pulse could with difficulty be felt, I ascribed the whole train of symptoms to the temporary depressing influence of shock, gave analeptics, ordered the application of a wet bandage, and hoped for the best.

At the end of the first hour after the operation, however, the alarming symptoms remained in full force; there was repeated vomiting, the extremities were cold and covered with a clammy sweat, and the pulse was almost imperceptible. After effervescing draughts with morphia, slight inhalation of chloroform, and wine had been employed with scarcely any effect; after the patient had complained alternately of violent desire to micturate, of pain in the loins, in the right shoulder, and especially in the abdomen, as well as of a sensation as if the menses were coming on, death occurred at four o'clock in the morning, fourteen hours after the operation. Consciousness was perfect to the last, and it is worthy of remark that the patient, very soon after the operation, had predicted with great decision that she would die at this hour.

The publication of the unfortunate result of the operation seemed to me called for, on the one hand, because the method practised appears to be coming more and more into vogue, and consequently makes accurate statistics desirable; and on the other, because in the books I have had an opportunity of consulting, I have not found a case in which a simple injection has been followed in so short a time by death, and in which no important anatomical change has been met with to account for the fatal result. In conjunction with Dr Pahl, I examined the body thirty-six hours after death. Connected with the left ovary was a non-adherent cyst, almost entirely collapsed, attached by a pedicle about the thickness of the finger; the walls were not very thick, there was no trace of inflammation in its interior, and it contained about a pint of a dark-brown fluid containing iodine. The wound made by the trochar was entirely closed, a little bloody effusion surrounded the spot. The right ovary was occupied by three small cysts; the lining membrane of the healthy uterus was decidedly congested, and covered with bloody mucus. In the cavity of the peritoneum was a small quantity of a light-brown fluid, which contained a small quantity of iodine; there was no trace of inflammation of the peritoneum, of the stomach, or of any of the other abdominal organs.

It accordingly appears to me, although I have come to this conclusion with reluctance, that the probable cause of death was the violent shock to the nervous system caused by the injection. That this is often very considerable is generally recognised, and that it was the cause of death in this case seems to be proved both by the fact that the alarming symptoms which made their appearance at the very beginning of the injection continued till death, and by the absence of any recognisable alteration in the organs involved; that in cases already published similar symptoms have disappeared after at most a few hours, cannot be used as a counter-argument. Now, as the resorption of the iodine cannot be charged with the unfortunate result, but simply the irritation, at first local, and then general, caused by the solution, I intend in future only to employ irritating injections while the patient is under the influence of chloroform, and to keep up this influence in a moderate degree for some time after the operation. —*Monatsschrift für Geburtskunde*, October 1860.

### ANTI-LACTESCENT PROPERTIES OF BELLADONNA.

Dr Fountain, in the *Lancet and Observer* (American Journal) for July, reports a case of a lady whose breasts had continued to secrete milk without cessation for three years. Various remedies had been brought to bear upon the case, and persistent effort made to arrest the secretion, without effect.

Dr Fountain ordered the following:—

℞.—" Ext. belladonnæ,
Ung. glycerini, ää ℥ij. M.

To be rubbed freely over *all* the breast, and covered with oiled silk to protect the clothing. By the time this was all used, less than a week, the secretion of milk was entirely arrested, and has not since returned." In our hands the belladonna has so often and speedily arrested the secretion of milk, and thus abated mammary inflammation and prevented abscess, that we regard it as much a specific in these cases, when timely and properly used, as is quinine in ague. We have used Tilden's fluid extract, without admixture.—*American Medical Monthly*, Sept. 1860.

### OBSERVATIONS UPON FIBROUS POLYPI OF THE UTERUS. BY DR C. HABIT.

From the observation of twenty-one cases of fibrous polypi of the uterus, the author has come to certain conclusions regarding them. These growths most commonly appear towards the latter years of sexual life, and especially about the beginning of the climacteric period. Six of the women had never borne children; fifteen had had children, some of which were born naturally, others were brought into the world by artificial means; one woman had had twelve children.

The shortest period of time between the last confinement and the first appearance of the patient, was ten months; in general, however, several years had elapsed. The symptoms first remarked by the patient were disturbances in the menstrual function, followed by leucorrhœa with its usual accompaniments.

In most cases, only one polypus was present; in two cases, there were several of different sizes. The seat of the polypus was most frequently in the back wall of the cavity of the uterus (especially in the case of those which were large and firm). The cervix was only twice affected. They were never met with growing from the circumference of the os externum. With regard to size, the small ones occurred most frequently. They varied from the size of a filbert to that of a man's fist or a child's head. In shape, they were generally pyriform; the small ones were sometimes round or oval. Their surface was generally smooth, as if polished; but was sometimes irregular, owing to local ulcerations, and, in two cases, from extensive sloughing. Their consistence varied a good deal, as did the length and thickness of the pedicle, which was generally thin in proportion to its length, especially in the case of the small polypi. In six cases only, did the thickness of the pedicle amount to an inch or upwards; in one case, the polypus had two roots. The uterus was always notably enlarged, in the condition of chronic inflammation. Perimetritis occurred pretty frequently.

The diagnosis was, in general, readily established by means of a vaginal examination. In fourteen cases the polypus had descended into the vagina, and in only two of these cases did the diagnosis present any difficulty. In one case, the lower surface of the polypus was so fissured, that at first it was taken for a portion of the vagina, affected with soft cancer. The finding of the pedicle, and the drawing of the swelling through the smooth, regular os uteri, corrected the first diagnosis. In the second case, a fibroid tumour, of the size of an orange, growing from the fundus of the uterus, had passed through the os into the vagina; and, by powerful traction, was brought outside the external genitals, by which an inversion of the uterus was produced. The large swelling was removed with the knife, and the next day, the remainder, which was supposed to be the thick pedicle of a uterine polypus, but which was really the inverted body of the uterus, was cut off with scissors. The peritoneal cavity was thereby opened into, and the patient died twenty-four hours afterwards. A neglect to trace up the supposed pedicle, and to make out the exact seat of the polypus by means of the uterine sound, occasioned this error in diagnosis.

Of the twenty-one cases, fourteen were operated upon—eleven by cutting, one by torsion, and two by ligature. In ten of the first set, polypus scissors were employed; in the eleventh, the thimble instrument of Mickschik. Four of these operated on by the first method, died, as also did the one operated on by Mickschik's method.

According to Dr Habit, we should not operate unless the symptoms are very urgent, until the polypus has emerged from the uterus, and then by means of excision, if the pedicle be not thicker than the finger; whilst, if the polypus be within the uterus, if its size be large and its pedicle thick, the ligature should be employed. In cutting off a thick pedicle, the blade of the instrument may readily wound the uterus, and the subsequent suppuration readily give rise to uterine phlebitis and pyœmia. Ecrasement and the use of galvano caustics are superfluous in the case of the small polypi, and should not supersede the ligature in the case of large ones; for the prevention of bleeding, which is the great recommendation of ecrasement, is even more certainly attained by means of the ligature.

After the extirpation of a uterine polypus, its recurrence is not to be apprehended.—*Zeitschrift d. Gesell. d. Aerzte zu Wien, No.* 12, 1860; and *Monatsschrift für Geburtskunde*, October 1860.

# Part Fourth.

## MEDICAL NEWS.

### MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XL., 1860–61. MEETING II.

*Wednesday*, *December* 5, 1860.—BENJAMIN BELL, Esq., President of the Society, in the Chair.

### PATHOLOGICAL MEETING.

### I. ILLUSTRATIONS OF INJURIES REQUIRING AMPUTATION.

*Mr Spence* showed preparations from three cases in which amputation had been rendered necessary by injury.

The *first* was a very beautiful preparation of the bones of the lower extremity. The history of the case was this:—Five weeks ago, a young man, walking on the top of an embankment of no great height, slipped his foot and fell, the leg being slightly bent at the time. He was at once brought to the hospital, when it was ascertained that he had sustained a compound fracture of the thigh, the periosteum being extensively denuded. In addition, there was a simple fracture of the bones at the lower part of the leg, involving the ankle-joint. The fracture of the thigh evidently extended into the knee-joint, and there was great laceration of the soft parts. Amputation was accordingly performed high up in the thigh. The preparation showed that the condyles of the femur had been broken up, that there was an oblique, almost longitudinal, and comminuted fracture of the lower part of the bones of the leg, that the ankle-joint had been opened into, and that a portion of the astragalus had been broken off. This case, Mr Spence remarked, showed how a very severe injury might be occasioned by a comparatively slight fall.

The *second* preparation illustrated a rather rare form of injury. A child, six years old, while playing in the Grassmarket three weeks ago, was ridden over by a cart, the wheel passing over the arm. He was brought into the hospital in the afternoon, and was seen by the house-surgeon. The limb was swollen and very cold, and it was evident that the humerus was fractured. As the parents would not allow the child to remain in hospital, the limb was put up very lightly, and directions were given, that if the swelling increased, the bandages should be loosened. On being brought back next day, pain had ceased, the limb was much swelled, and the hand was cold, dark-coloured, and mottled. Mr Spence was unwilling to operate at once, but retained the child under observation. The limb was laid straight, and surrounded with cotton wadding; no bandage was applied. Two hours afterwards the hand was still cold; the mottled appearance was not increased. In the evening, it was evident that there was no attempt at recovery; the limb was cold and dead. Amputation, accordingly, was performed through the surgical neck of the humerus by means of an external flap. The preparation showed that the artery (which had been injected) had been ruptured opposite to the point of fracture, having apparently been pressed by the cart wheel against the sharp edge of the bone. Anastomosis not having been established, the limb had perished, not by gangrene, properly so called, but by direct death. Mr Spence remarked that in many cases of fracture it was wonderful how the arteries escaped injury, being generally pressed out of the way of the bone. Here, however, all vascular supply had been fairly cut off.

In the case from which the *third* preparation had been obtained, a severe burn of the arm, forearm, and trunk had been sustained three months ago. After the general health had been somewhat re-established, it became evident that such destruction of the true skin of the arm and forearm had occurred, that there was no chance of a satisfactory recovery, for even if cicatrization took place, such contraction as was unavoidable must render the limb useless. Latterly the health of the patient was evidently giving way, owing to constant discharge, and pain and irritation from the large weak ulcer. Amputation was accordingly performed at the shoulder-joint, the only flap obtainable, from the condition of the soft parts, being from in front of the articulation.

In the three cases described, the patients had gone on favourably.

### II. TUBERCLE OF THE BRAIN.

*Dr Matthews Duncan* exhibited three specimens of tubercle of the brain and of its membranes, from cases occurring in the practice of the Hospital for Sick Children. The *first* specimens were procured from a boy four years of age, who was admitted into the hospital in an advanced stage of acute hydrocephalus. In this case, the membranes of the brain exhibited appearances such as are ordinarily observed in *post-mortem* examinations of cases dying of this tubercular disease. But the substance of the brain contained five masses of cretaceous tubercle, each of about the size of a field bean. These masses were surrounded by apparently healthy cerebral matter. Two of them were in the surface of the cerebellum, and were symmetrical, occupying the posterior parts of the lower surfaces of the right and left cerebellar lobes; and in these situations the whole membranes were coherent with the cerebellum, so that this part was torn on forcibly removing it from the fossæ in which it lay. A larger calcareous mass was observed in the cerebellum, lying near the middle of the upper surface of the vermiform process. A fourth degenerated tubercle was found in the midst of the left hemisphere of the cerebrum, and a little above the roof of the left ventricle. A fifth was discovered lying in the anterior lobe of the right hemisphere, and separated from the falx by a thin layer of grey matter. Besides these cretaceous masses in the brain, numerous moderately thick, scale-like, chalky masses were observed in the peritoneum, between the upper surface of the liver and the corresponding surface of the diaphragm, and in this situation the two layers of peritoneum were amalgamated by old adhesions. There were also found numerous large cretaceous masses in the mesenteric glands. The boy had always been delicate, and had struggled through the various stages of tuberculosis of the peritoneum, the mesenteric glands, and even of the brain, only to die of the same disease attacking another and more dangerous part. The *second* specimen was derived from a girl four years of age, who died of chronic hydrocephalus. It was a large tubercular mass, of about the size of a hen's egg, found at the posterior margin of the cerebellum, firmly connected by its superior surface to the lower surface of the tentorium cerebelli, and by its posterior inferior surface to the membranes lining the cerebellar fossæ. The right half of the superior portion of the mass projected slightly through the tentorium cerebelli, so as to come in contact with the inferior surface of the posterior lobe of the right cerebral hemisphere, to which it was firmly adherent. The tumour occupied the whole thickness of the vermiform process, and extended for an inch and a half into the right cerebellar hemisphere, occupying its whole thickness, and likewise about an inch of the whole thickness of the left hemisphere. The mass was of very firm consistence, and of a greenish yellow colour, observed on making a section through the tumour. At one spot there were distinctly seen small masses of brain substance in the midst of the tubercular matter. To the naked eye, and under the microscope, it had the usual appearances of hard cheesy tubercle. The surrounding brain-tissue was slightly softened, and of a reddish tinge. The right and left ventricles of the brain were greatly distended with clear fluid. The head measured, in its largest occipito-frontal circumference, 21¾ inches; from the root of the nose to the occipital protuberance, 13½ inches; from ear to ear directly over the vertex, 12½ inches. Miliary tubercles were found in the apex of the right lung, and tubercular deposits in the mesenteric glands. For at least two months before she died, this child retained only the power of swallowing. She generally lay with her eyes open, and her pupils moderately dilated. She often screamed, and on such occasions her hands became clenched, and her feet extended and toes flexed. There were some prolonged attacks of a condition like opisthotonos, and also numerous slight convulsive seizures affecting the whole body. It scarcely admits of doubt that, in this case, the tubercular tumour obstructing the venous circulation in the brain, and more particularly pressing on the trunks coming from the region of the ventricles, in the direction of the torcular Herophili, gave rise to the serous effusion from the vessels.

### III. SUB-ARACHNOID HYDROCEPHALUS.

*Dr Matthews Duncan* showed a third specimen from a boy eight months old, who had been five months labouring under chronic hydrocephalus. It exhibited the coherent condition of the membranes of the whole upper and lateral surfaces of the brain. The dura mater, and the so-called two layers of arachnoid, and the pia mater, were in one mass. The arachnoid cavity was obliterated. The hydrocephalic fluid was effused beneath the visceral layer of the arachnoid in large quantity. The ventricles also contained an unnaturally large amount of fluid. The membranes were thickened, and intensely congested over large surfaces. On the upper and lower surfaces of the anterior lobes of the brain were observed several thin whitish masses of tubercular deposit and of greenish lymph. The case seems to have been one of chronic tubercular meningitis. It began and ended with severe convulsive attacks. During the course of the illness there was occasional vomiting and a short nervous cough, and carpopedal contractions persisted. The head measured 19½ inches in its largest occipito-frontal circumference; from the root of the nose to the occipital protuberance, 11½ inches; from ear to ear, directly over the vertex, 11 inches.

### IV. LEUKÆMIA.

*Dr Warburton Begbie* directed attention to a case of Leukæmia, which had been under his observation for upwards of twelve months. The patient, an Irish labourer, had for the first time noticed a fulness in the left side of the belly, about eight months previous to his coming under Dr Begbie's notice, and attributed the swelling to an injury he had shortly before sustained from a fall. He had never suffered from ague. The spleen, which is very greatly enlarged, occupying the whole of the left side of the abdomen, and passing considerably to the right of the mesial line, is the only organ affected. The liver and external lymphatic glands are uninvolved. The blood, viewed under the microscope, shows the presence of the colourless corpuscles in very greatly increased amount. The patient, who is pale in appearance, continues to enjoy tolerable health, and has manifested no marked tendency to hæmorrhage. Some months ago, as the result of a kick over the left shin, suppuration occurred, and some amount of bleeding took place, which was arrested by compresses employed by Mr Spence. The spleen is continuing to increase in size, and the alteration in the blood is becoming more and more conspicuous. A nourishing diet and the use of iron has been the plan of treatment pursued. Within the last few weeks, a patient, suffering from well-marked leukæmia, with enlargement of both spleen and liver, and some tumefaction likewise of the lymphatic glands in the neck, axillæ, and groins, had contracted typhus fever in the hospital, and died. The spleen, in that instance, had been found by Dr Haldane to weigh upwards of four pounds. In the case presented to the Society, there could be no hesitation in concluding that the weight of the spleen is double or even treble that of the organ in the fatal case referred to. Dr Begbie had at present under his care in the Infirmary a lad presenting very considerable enlargement of the external lymphatic glands, and alteration in the relation of the blood corpuscles, as determined by the microscope, but without any affection of the spleen. This was a case of the so-called Leucocytosis of Virchow.

### V. TUMOURS AT THE BASE OF THE BRAIN.

*Dr W. T. Gairdner* and *Dr Haldane* each showed a specimen of a tumour growing from the base of the brain. The symptoms during life presented a very marked contrast in the two cases. (These cases will be published in full, illustrated with woodcuts, in an early number of this *Journal.*)

### VI. GANGRENE OF THE LUNG FROM OBSTRUCTION OF A BRANCH OF THE PULMONARY ARTERY.

*Dr Haldane* showed a specimen of gangrene of the lung. In the lower part of the upper lobe of the right lung was an irregularly quadrangular cavity, measuring 3 inches in length from above downwards, filled with dark blood and a very fœtid pultaceous matter. The cavity had in some places a tolerably well-marked lining membrane; adherent to its walls were shreds of dead pulmonary tissue; it was crossed by two soft black cords, which came from a mammillary projection on the inner wall of the cavity. The outer wall of the cavity was formed by the pulmonary pleura, which was in a sloughy condition, and gave way while the lung was being removed. On examining the pulmonary artery, a branch, nearly a fifth of an inch in diameter, leading to the portion of lung affected with gangrene, was found completely obstructed by a firm, decolorized, adherent clot, which commenced at a point where the vessel divided into two branches, and extended backwards for three-quarters of an inch. It was now found that the mammillary projection noticed on the inner surface of the cavity was the end of the obstructed vessel partly imbedded in pulmonary tissue, and that the two black cords which crossed the cavity were the branches into which it divided.

When the heart was examined, decolorized clots were found adherent to the musculi pectinati of the right auricle. These clots were softened in the centre, and were, in fact, little pouches, filled with a yellow, purulent-looking fluid, which was found, on microscopic examination, to contain a large quantity of granular matter and a comparatively small number of cells, having all the characters of the white globules of the blood. In addition, there was pulmonary emphysema, and dilatation of the right side of the heart.

*Dr Haldane* remarked, that there could be little doubt as to the cause of the gangrene in this case. A clot, similar to those found in the right auricle, had broken down, and a portion of it had become impacted at the point of bifurcation of a considerable branch of the pulmonary artery. A secondary coagulum had formed behind this, and the vessel had been impenetrably sealed up. The result was, gangrene of that portion of the lung supplied by the obliterated branch; and it was interesting to find how perfectly the gangrene was limited to that part.

*Dr Haldane* had little doubt that many cases of gangrene of the lung depended on obstruction of branches of the pulmonary artery. The above was the second case of the kind he had met with within two months. No doubt the bronchial arteries were the principal nutrient vessels of the lungs, and it was very possible that the effect of obstruction of the pulmonary artery was not to cause death of the part directly, but to set up an inflammation, which terminated speedily in gangrene; still, such cases showed that obstruction of branches of the pulmonary artery impaired very materially the vitality of the lung, and that the inflammation set up by the irritation of the obstruction could not be controlled, but passed on very speedily to the death of the part.

### VII. FIBRINOUS DEPOSITS (CAPILLARY EMBOLI) IN KIDNEY.

*Dr Haldane* showed a kidney containing so-called fibrinous deposits. The preparation had been obtained from the body of an old woman who was ridden over by a cart, and died four days afterwards. At the *post-mortem* examination, there was found to be a fracture of the first and second lumbar vertebræ; blood was extravasated into the peritoneum, and into the retro-peritoneal cellular tissue. Two or three large cysts, filled with a clear fluid, projected from each kidney. On cutting open the left kidney, several patches of a yellowish colour were found in its cortical portion. These were mostly situated near the circumference of the organ, were of a wedge shape (the base of the wedge being directed towards the periphery), and were surrounded by a ring of vascularity, which contrasted strongly with the yellow colour of the deposits themselves. The aorta was most extensively diseased, being in a state of extreme atheromatous degeneration. Patches of the lining membrane were gone, others hung loose; and adhering to the exposed middle coat of the vessel was a soft, putty-like matter (atheroma), which had a glistening, mother-of-pearl appearance, in consequence of the large quantity of cholesterine it contained. The origin of both renal arteries was partially obstructed by the thickened and diseased condition of the lining membrane of the aorta. In the left renal artery, small masses of the same atheromatous matter as was found in the aorta were loosely adhering to its lining membrane, and a similar matter could be traced into several of its larger divisions.

In this case, *Dr Haldane* thought it was evident that the deposits in the kidney depended upon obstruction of the minute vessels of the affected parts. Portions of atheromatous matter had been washed off the aorta into the left renal artery, then crumbled down, and were carried into the smallest vessels of the organ; and hence resulted (as so well pointed out by Virchow) the peripheral situation and the wedge shape of the deposits.

### VIII. CARTILAGINOUS DEPOSITS ON THE CAPSULE OF THE SPLEEN.

*Dr Haldane* showed a spleen, the capsule of which was studded over with white prominent masses, which varied from the size of a grain of sago to that of a field bean, and were of firm cartilaginous consistence. Dr Haldane observed, that such deposits on the capsule of the spleen were of not unfrequent occurrence; but that it was more usual to meet with a few patches, or even a single patch of considerable size, than, as in this preparation, in the form of very numerous isolated masses.

### IX. DOUBLE UTERUS.

*Dr John Struthers* exhibited a specimen of double uterus. He had published a full description of the case in the *Edinburgh Medical Journal* for August 1860, but this was the first meeting of the Society since the case occurred.

### X. BILOCULAR STOMACH.

*Dr John Struthers* exhibited a specimen of muscular constriction of the stomach. The constriction was, as usual, four or five inches from the pylorus, and was gradual, though strongly marked. It was taken from a middle-aged male two months ago, and has been preserved in spirit. The contraction, although muscular in its origin, continues after death, unless strong distending force is used. To illustrate this, Dr Struthers showed a stomach, in which a like constriction had disappeared under strong distension. This condition of the stomach occurs so frequently as to lead to the conclusion that it is probably the natural condition of the stomach during digestion. In other two cases, opened by Dr Haldane at the same time, the same kind of constriction was present. In most cases it is not present, at least to a marked degree, being found, probably, in those only in which death has overtaken the stomach in that condition. As a contrast to the muscular or temporary constriction, Dr Struthers exhibited a specimen of permanent, or congenital, division of the stomach into two sacs, communicating with each other by a narrow passage, and without any trace of disease. The preparation had been in his possession since 1848, and is one of the two cases of healthy double stomach which he had described in the *Edinburgh Medical Journal* for February 1851,—so far as he knew, the only cases on record of true double stomach in man, not brought about by disease.

### XI. TRACHEOTOMY IN CROUP.

*Dr Watson* exhibited the larynx and trachea of a child æt. ten months, in whom, three weeks ago, he had performed tracheotomy on account of croup. In this case, when seen by Dr Watson, suffocation was impending, the respiratory acts were attended by drawing in of the chest, and expiration was much prolonged; the surface was blanched and cold, the lips purplish, the face and neck œdematous. The opening of the trachea afforded complete relief for twenty-four hours. At the end of that time, however, respiration again became obstructed, and on removing the tube (which was a double one, and had been repeatedly cleansed) a loose portion of false membrane was seen flapping up and down with each respiration. On removing this, and clearing the bronchi, by means of a pair of small dressing forceps, of more of the same exudation material, respiration became easy, and continued so for four hours, when symptoms of obstruction again recurred. Although relieved five or six times in this way, the frequent reproduction of the obstructive material, and the increasing weakness of the child, speedily proved fatal, the child dying thirty-eight hours after the operation. The preparation showed patches of croupous deposit both in the trachea and larynx. The bronchi were plugged with a quantity of thick glutinous muco pus, and the lungs, except in the upper lobes, were completely non-crepitant and collapsed. In opening the chest an unusual phenomenon presented itself, viz., the emphysematous distension of the anterior mediastinum, by which the heart was partially displaced towards the left side. This appeared to have resulted from the air finding a more ready access to the expanding thorax through the wound, and external to the trachea, than through the obstructed bronchi.

### XII. MALFORMATION OF THE GENITO-URINARY ORGANS.

*Dr Watson* exhibited a photograph which he had received the other day from Dr J. Macgregor Maclagan. The photograph displayed the condition of the genitals in a case of supposed hermaphrodism, which Dr Maclagan had had an opportunity of examining after death. The genital organs were found to be imperfectly developed. A rudimentary penis projected downwards from a double eminence, which resembled the labia majora, but which contained two well developed testicles. Above the pubes was an irregularly rounded and ulcerated surface, upon which the ureters opened. There was no trace of a bladder. Although the face was covered with a copious beard and moustache, this individual—who died, aged seventy-six—was commonly believed to be a woman, and always dressed as such.

### XIII. SCIRRHUS OF THE MALE MAMMA.

*Dr Watson* exhibited a specimen of scirrhus of the male rudimentary mamma, removed by him from a patient upwards of 50 years of age. The tumour was about 3 inches in diameter and an inch in thickness. The elevated central part of its surface, of a dark purplish colour, and glazed as if it had been varnished, exuded a thin ichorous fluid, was obviously not an ulcerating surface properly so called, but a portion of integument implicated in the cancerous disease. The centre of this hypertrophic cancer was undergoing softening, and its under surface was attached to the pectoralis muscle. There was no glandular enlargement; and, as the disease was attended with great pain, its removal had been undertaken to relieve the patient from a source of great irritation and exhaustion.

*Dr Watson* exhibited, as a companion to the former preparation, a specimen from his museum, of simple sarcomatous enlargement of the male mamma. Dr Watson remarked, that, while the glandular portion of the tumour was certainly very much larger than usual, the principal part of the mass consisted of fatty tissue, interspersed in the form of granular masses among the rudimentary gland texture. In this patient—a healthy young man—the friction of the clothes against the nipples occasioned very great uneasiness of a neuralgic kind; but Dr Watson was inclined to think that the principal part of the irritation which induced the patient to seek operative relief, was a mental one, from the constant bantering about his mammary development, to which, from its very obvious size, it appeared he was likely to be exposed.

### XIV. OSTEO-SARCOMA OF SUPERIOR MAXILLA.

*Dr Watson* exhibited a portion of the left superior maxilla occupied by an osteo-sarcomatous tumour, developed from the posterior part of the alveolar process, and extending upwards into the antrum. In this case, Dr Watson had excised the whole of the left superior maxilla except the orbital plate. This was effected by means of an external incision, which only involved the middle line of the upper lip, and passed into the nostril upon the left side. By this, room was gained so as to dissect the soft parts from the bone, and to cut through the antrum, by means of saw and forceps, below its orbital plate. By this procedure, while the disease was completely removed, an osseous support for the orbital contents was retained. The result has proved most satisfactory; for, at the end of a fortnight, not a trace of any operation having been performed was visible externally, the linear incision having healed by the first intention. A further interesting feature in this case was, that the patient, when subjected to the operation, was three months gone in pregnancy, upon which condition the operation appeared to have no prejudicial effect.

### XV. FIBROUS TUMOUR OF THE MAMMA.

*Dr Watson* exhibited a small fibrous tumour which he had that morning removed from the mammary region of a young married female. The tumour presented all the characters of the chronic mammary tumour (of Sir Astley Cooper), or adenoid tumour (of M. Velpeau), by which name it is now more commonly recognised. It was imbedded in the substance of the mamma, upon its outer and axillary margin; but, though enclosed in the substance of the gland, it was completely distinct from it, having a well-marked fibrous capsule of its own, and was quite loosely attached at every point except where its nutrient vessels entered the capsule. Its structure displayed the ordinary imperfect and disorderly imitation of the glandular tissue, in the neighbourhood of which it was developed.

The tumour had first been observed by the patient about 18 months previously, and a few months after her marriage. At that time it was about the size of a large pea, and occasioned no uneasiness whatever. During the latter months of her pregnancy it was observed by her to enlarge; but after parturition and during lactation, it not only enlarged to its present size, but gave rise to a very considerable amount of uneasiness when handled or pressed upon by her clothes.

### XVI. NASAL POLYPUS.

*Dr Watson* exhibited a specimen of nasal polypus growing from the turbinated bone, which he had lately assisted Professor Miller to remove from the fauces of a gentleman. It had existed for ten years, and completely blocked up the whole posterior nares. A small portion of the lower part of the growth was alone visible from the mouth, as the mass protruded the soft palate before it. In the operation, after clearing the anterior part of the nostril upon both sides of several large, firm, superficially vascular, and therefore suspicious-looking polypi, which distended the nose and deformed the face, this pharyngeal portion was seized by a vulsellum from the mouth, and twisted off from its attachment by a pair of forceps introduced from the nostril. The operation was attended with the loss of very little blood, considering the size of the polypus removed. It measured fully 4 inches in length; and, though attached by a narrow neck, immediately beyond enlarged into a rounded mass 2 inches in its largest diameter. Immediately after its removal, the patient could breathe through the nostrils, which he had been unable to do for ten years; and, when seen in the evening, was found sleeping soundly with his mouth closed. The growth was found to consist of the usual structures of the mucous polypus of the nostril.

### ELECTION OF OFFICE-BEARERS.

The following gentlemen were elected office-bearers at the meeting of the Society held on Wednesday, December 5, 1860:—*President*—Benjamin Bell, Esq., F.R.C.S.E. *Vice-Presidents*—Charles Wilson, M.D., F.R.C.P.E.; Archibald Inglis, M.D., F.R.C.S.E.; John Coldstream, M.D., F.R.C.P.E. *Councillors*—David Skae, M.D., F.R.C.S.E.; Thomas H. Pattison, M.D., F.R.C.P.E.; John Henderson, M.D.; John Moir, M.D., F.R.C.P.E.; Peter D. Handyside, M.D., F.R.C.S.E.; William Scott, M.D., F.R.C.S.E.; William Husband, M.D., F.R.C.S.E.; George W. Balfour, M.D. *Treasurer*—John Struthers, M.D., F.R.C.S.E. *Secretaries*—James D. Gillespie, M.D., F.R.C.S.E.; Patrick H. Watson, M.D., F.R.C.S.E.

## ROYAL COLLEGE OF PHYSICIANS.

At the Annual Election Meeting of the Royal College of Physicians of Edinburgh, held on Thursday, 6th December 1860, the following office-bearers were elected for the ensuing year:—*President*—Dr Alexander Wood. *Council*—Dr Peter Fairbairn, Dr William Seller, Dr Charles Bell, Dr Alexander Keiller, Dr William T. Gairdner, Dr William Henry Lowe. *Vice-President*—Dr James Y. Simpson. *Censors*—Dr David Craigie, Dr John Moir. *Examiners of the College*—The President, Drs Craigie, Seller, Douglas, Paterson, Wright, Keiller, Pattison, Cumming, Gairdner, Duncan, J. W. Begbie, Haldane, Sanders, Wilson. *Special Examiners of Foreign Graduates*—The President, Drs Craigie, Seller, Moir, Duncan, Ziegler, Wilson. *Treasurer*—Dr Andrew Halliday Douglas. *Secretary*—Dr Daniel Rutherford Haldane. *Librarian*—Dr Charles Wilson. *Fiscal*—Dr John G. M. Burt. *Curator of Museum*—Dr T. Strethill Wright. *Clerk*—Mr Christopher Douglas, W.S. *Under Librarian*—Mr John Small. *Officer*—Thomas Marshall.

## DEATH OF SIR HENRY MARSH, M.D.

A feeling of intense sorrow has been excited throughout the city by the announcement of the sudden death of Sir Henry Marsh, M.D., at his residence in Merrion Square. The melancholy event occurred shortly after noon on Saturday, 1st December, and the intelligence, which spread with electric rapidity in every quarter, produced a painful shock amongst all classes. Occupying as the deceased did for so long a period the most exalted position in his honourable profession, and conferring upon the community in which he lived inestimable benefits, by his eminent abilities, employed with assiduous zeal and generous liberality, the death of such a man cannot fail to be regarded as a public loss. The circumstances of the sad event may be briefly told. On Saturday morning he was apparently in the enjoyment of his usual vigorous health, preparing to discharge the arduous duties of his daily life, when, about nine o'clock, he was seized with a giddiness, and fell, as he was proceeding along some part of the house. He was raised by members of the family, who heard the noise, and taken up to one of the rooms, where he lay, perfectly conscious, and explained how he had fallen, observing also that he thought he had sprained his leg. On examination, it was found that he had broken one of the bones of the leg. In every direction medical assistance was immediately sought for, and Surgeon Cusack was soon in attendance. Surgeon Hamilton also happened to be passing, and earnestly co-operated in rendering his professional aid. It was soon evident, however, that Sir Henry was fast losing his consciousness, and, in spite of all the efforts which were made, directed by the skill and experience of his medical brethren, he became gradually insensible, and at twenty minutes to one o'clock he ceased to exist. The summons of death's stern messenger, whom he had often baffled and delayed when others were concerned, was in his own case prompt and peremptory, and no human intervention could procure even a temporary respite from the execution of the terrible decree to which all must one day yield obedience. No symptoms of paralysis or apoplexy had been previously felt, and the severity of the calamity which has befallen his family has been aggravated by the fact that it was totally unexpected. Few public men have achieved greater renown in their professional career, or enjoyed more fully the esteem and confidence of the public, than Sir Henry Marsh. His success has been brilliant and uninterrupted, and the reputation which he won in early life he maintained untarnished to its close. The deceased was descended from an English family of high distinction, and some of his immediate ancestors have filled exalted positions in the Church of Ireland. The distinguished Francis Marsh, who was created Archbishop of Dublin in 1681, was the first of the stock which settled in this country, and from him sprang an illustrious line of ancestry (descendants?). The Rev. Robert Marsh, rector of Killinane, county of Galway, was the father of the deceased gentleman. On the maternal side, his descent was not less distinguished, and an interesting reminiscence was associated with it in the fact that amongst his mother's ancestors was Sir Thomas Molyneux, the first physician whose talents were rewarded with the honour of baronetcy. Sir Henry Marsh was born in Loughrea, county Galway. In early life he was employed in agricultural pursuits, but one day, as he was riding about the fields, happening to meet a stranger to whom he showed some courtesy, and who turned out to be a Fellow of Trinity College, and an intimate friend of his own uncle, the Rev. Digby Marsh, S.F.T.C.D., his ambition was excited by the prospect held out of advancement and honour in the path of study, and he therefore abandoned his former habits, and applied himself to learning with ardour and success. He entered the University under the tutorship of his cousin, who subsequently resigned his fellowship, and won his way to the judicial bench—the Hon. Judge Crampton. Sir Henry's father was desirous that he should enter the Church, but he preferred the surgical profession, and in 1814 was apprenticed to the late Sir Philip Crampton, Bart., under whom he pursued a course of practical study within the venerable walls of the Meath Hospital. Sir Henry having received a wound while dissecting, which caused the loss of part of the forefinger of his right hand, he abandoned the surgical, and adopted the medical branch of the profession. He obtained a medical degree in Trinity College, and was also made a licentiate of the College of Physicians. After studying for two years on the Continent, availing himself of the fine opportunities which he enjoyed for acquiring experience, and receiving new and enlarged ideas under the instruction of French physicians, then in advance of their professional contemporaries in those countries in enlightenment and skill, he returned to Dublin, and obtained an appointment in connection with Dr Steevens' Hospital, where his genius and attainments had an ample field, and were displayed with signal success. In 1820 he married Mrs Arthur, daughter of the late Thomas Crowe, Esq., of the county Clare, by whom he had issue. Major Henry Marsh, 1st King's Dragoon Guards, who was born on the 3d of April 1821, is heir to the title. It was a consolatory circumstance that the Major, who recently returned, on leave of absence from India, was present to take a last sad farewell of his beloved father. Lady Marsh died in the year 1846, and in ten years afterwards Sir Henry became united in marriage with Mrs Kemmis, daughter of the late Robert B. Jolly, Esq., and widow of the late

Thomas Kemmis, Esq., of Shane House, Queen's County, who survives him. A long catalogue of honours is connected with the name of Sir Henry Marsh. He was President of the College of Physicians; and was Physician in Ordinary to the Queen in Ireland; a member of the Royal Irish Academy, and other learned bodies; and consulting physician to nearly all the public institutions in this city. He has contributed largely, by his admirable lectures and his excellent example, to elevate the schools of medicine in Dublin to the proud position which they now occupy, and to infuse liberal and enlightened principles amongst the students. The junior members of his profession had reason to appreciate his considerate courtesy and his personal qualities as well as his professional abilities, which placed all classes under obligations of admiration and gratitude, that, we trust, will find suitable expression in a public testimonial.—*Dublin Daily Express.*

## DEATH OF DR ANDREWS, OF BIRMINGHAM.

We regret to announce the very sudden death of Dr Andrews, Physician to the Queen's Hospital, and Professor of Physiology, Queen's College, Birmingham, which took place on December 19, in consequence of apoplexy.

## VARIETIES.

Royal College of Surgeons of Edinburgh.—At a meeting of the Royal College of Surgeons, held on the 19th December 1860, Walter Boyd M'Kinlay, M.D., of Paisley, and John Christie, M.D., of Aberdeen, were admitted as Fellows.

The Climate of Algeria in Phthisis.—M. de Pietra-Santa was, some time ago, entrusted by the minister of Algeria with the mission of studying the climate of that country, in a medical point of view. Furnished with special instructions from the Comité d'Hygiène, or Board of Health, M. de Pietra-Santa spent six months in Algeria in making careful researches on the subject, and has drawn up the results of his experience in a report presented to the minister. He states, that the examination of the nature of the soil, of the waters, and of the state of the atmosphere, has convinced him of the beneficial influence of the climate of Algiers on phthisis, and generally on all diseases of the chest. This favourable climate cannot, indeed, cure consumption at its last stage,—in fact, at that period it seems only to aggravate it; but at the commencement of the attack, it effectually combats the disease, and frequently arrests it.

Zoological Garden of Acclimatization.—The French newspapers tell us that a piece of ground, called the Sandy Plain (Plaine des Sablons), situated in the barest and most arid part of the Bois de Boulogne, near Paris, has just been converted by the French Government into a beautiful garden, specially devoted to the purpose of acclimatizing foreign breeds of animals. The garden was opened about the end of October; and the number of visitors who flocked to see it, recalled the days of the great Exhibition at the Palais d'Industrie. Among the vast variety of new and interesting objects, the magnificent foreign birds, with their brilliant plumage, proved particularly attractive to the visitors; and a large herd of lamas and alpacas were also special favourites. A large space has been set apart for a colony of kangaroos, whose curious movements excited great curiosity among the crowd. In the centre of the garden is a lake, for the reception of all kinds of water-fowl; and an aquarium, with a continuous stream of water, in which *pisciculture* is to be carried on, is placed in a special building, lighted from above, in such a manner as to allow visitors to study all the movements and evolutions of the "finny tribes." The latter part of the arrangements is not yet completed, but will doubtless prove one of the most interesting parts of the garden. The conservatory, which is also to be provided with an aquarium, or small river, is of enormous dimensions, and during winter is expected to prove an additional attraction to visitors, "who will be charmed to find there verdure and flowers during the season of nature's repose. In short, it is a magnificent establishment, which has hitherto been wanting to France, and which, at its commencement, has already won the public favour."

## NOTICES OF THE APPEARANCE OF SYPHILIS IN SCOTLAND IN THE LAST YEARS OF THE FIFTEENTH CENTURY. BY J. Y. SIMPSON, M.D.[1]

Dr Simpson's paper commenced by stating, that medical men are for the most part agreed upon two points in relation to the history of syphilis—viz., that it is a species of disease which was unknown to the Greek, Roman, and Arabian physicians; and that it first began to prevail in Europe in the latter years of the fifteenth century.

The non-existence of syphilis in ancient times, and the circumstance of its original appearance in Europe about the date alluded to, are opinions strongly borne out by two sets of facts. For, *first*, no definite account of this marked and extraordinary species of disease is to be found in the writings of any one of the ancient Greek or Roman physicians, historians, or poets; and, *secondly*, of the numerous authors whose works exist in the learned collections of Linsinus, Astruc, and Girtanner, and who saw and described the malady in the later years of the fifteenth or commencement of the sixteenth century, almost all comment upon it as (to use their own general expressions) "Morbus Novus," "Morbus Ignotus," etc., etc. It would not, however, said Dr Simpson, affect our present object were we to consider the disease, as it appeared about the period in question, not to have been a new malady previously totally unknown, but merely, as some have thought, an aggravated form of a disease formerly existing in so mild a form as not to have attracted general observation. Dr Simpson considered it unnecessary to his case to investigate the question of the probable source of the disease, and the exact date at which syphilis first burst forth in Europe. In relation to the object he had in view, it mattered not whether it sprung up spontaneously and endemically in Spain, Italy, or France, at the era in question, or was imported from Africa, as Gruner, Infessura, and others allege; or from Hispaniola, as Astruc, Girtanner, Wetherhead, and a host of authorities have stoutly, and not unsuccessfully, maintained. Nor was it necessary to discuss whether it first showed itself in 1493, as Sanchez and Hensler consider that they have proved; or in 1492, as Fulgosi asserts; or as early even as the month of October 1483, as Peter Pinctor, in 1500, proved astrologically to his own complete satisfaction that it ought at least to have done, inasmuch as that was, as he has sagaciously shown, the precise and exact date of the conjunction of Venus with Jupiter, Mars, and Mercury, and the conjunction of these or other stars in the heavens above was, as he and many of the astrological physicians of his time believed, the origin of this new scourge on the earth below. Dr Simpson started from the general proposition, that the disease was in 1494 and 1495 first distinctly recognised in Italy during the invasion of that country by the victorious army of Charles the Eighth of France. The malady is generally allowed to have earliest broken out in a marked degree at Naples, about the time that Charles took possession of that city in the spring of 1495, or nearly two years after Columbus' return from his first voyage to Hispaniola. Charles set out again for France in May 1495; and the malady seems to have been both diffused by his infected troops along the line of their northward march, and afterwards carried to their respective houses by his own French soldiers, as well as by his various Swiss, German, and Flemish auxiliaries. This new malady was not long in reaching Scotland, as attested by edicts issued in 1497 by the Town Council of Aberdeen, with reference to the appearance of the disease there; and by the Privy Council in Scotland, in relation to its prevalence in Edinburgh. By the Aberdeen edict it was "stated and ordanit, that all licht weman be chargit and ordanit to decist fra thar vices and syne of venerie;" and a few years later, "that diligent inquisition be taken of all infect personis with this strange *seikness of Nappeles*." The Edinburgh edict was six months later in date than the first of those issued by the Aberdeen authorities. It was, as already stated, drawn up by the King's Privy

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[1] *Read before the Epidemiological Society, on Monday, November 5, 1860.*

Council, and proceeds thus: "It is our Soverane Lordis will, and the command of the Lordis of the Counseill, sent to the Prouest and Baillies within this Burgh, that this proclamation follow and be put into execution for the eschewing of the greit apperand danger of the infection of his Lieges fra a contagious sikness callit the Grandgore," etc. "That is to say, we charge straitlie and command that all manner of personis, being within the Fredome of this Burgh, quhilk are infectit or has been infectit and incur'd of this said contagious Plage callit the Grandgore, devoyd, red, and pass furth of this Town and compair upon the sandis of Leith, at ten houris before None, and thair sall have and synd Botis reddie in the Havin ordanit to thame be the officary of this Burgh reddilie furneist with Victuales, to have thame to the *Inch*, and thare to remain quhill God provyde for thair Health." The edict further ordains, that those who take upon them the cure of the disease are also to pass with "infectit" to the *Inch;* and disobedience of the edict on the part of the doctor or his patient, rendered both alike amenable to the penalty of being "brynt on the Cheik with the marking Irne, that they may be Kennit in time to Come."

At the time of the first appearance of syphilis in the northern realm, the throne of Scotland was occupied by James IV., a prince who was a great patron of the arts and sciences of his time. At different times we find him experimenting in chemistry, in physiology, and in medicine. His daily-expense books contain many entries of purchases for instruments and materials to make the unmakeable "Quinta Essentia," or philosopher's stone; and he had laboratories for these investigations both at Edinburgh and Stirling. King James practised the art of leech-craft, as well as experimented in alchemy and physiology. "He was," says Lindsay of Pitscottie, "well learned in the airt of medicine; and was ane singular guid chirurgiane; and thair was none of that profession, if they had any dangeris cure in hand, bot would have craved his adwyse." The High Treasurer's account shows that the king had a right royal way in one important respect with his patients, that by it he might have secured a large consulting and private practice even in these modern days of high rivalry and competition; for he paid his patients, instead of being paid by them. Thus, in his daily expense-book, under the date of April 14th, 1491, is the following entry:—"Item to Dominico, to gif ye king leve to lat him blud," 18 shillings Scotch; and a short time afterwards, "Item to Kynnard ye barbour, for twa teith draun furtht of his hed be ye king, xviii shillings." He seems also to have tried his hand at ocular surgery; but the following entry rather ominously hints that he was not a successful operator for cataract:—"Item giffin to ye blind wif yat had her ein schorne, xviii shillings." A prince imbued with such medical and surgical propensities would naturally feel deeply interested in the first appearance within his realm of such a malady as syphilis; and in his treasurer's accounts there are several entries indicating that the king had bestowed monies upon various persons affected with this disease. Thus there are several entries between September 1497 and April 1498, for sums awarded to persons of both sexes afflicted with the "grant gore."

There are various sarcastic allusions to the disease by the Scottish poets of these early days, amply testifying to the fact of its rapid diffusion both among the *attachés* of the court (who were then the most common objects of poetical satire) and among the community at large. William Dunbar, the flower of the old Scottish poets, was at the period of the first introduction of syphilis, in 1497, in the prime of manhood; and in two or three years afterwards, viz., in 1500, was attached to the King and Court of James IV. by an annual state pension. In a number of verses addressed to his patroness, the Queen—verses which strongly appear to us at the present day, with our existing standards of taste, as most unseemly and indecent—he commemorates the communication of the new disease, under the name of the "pockis" or the "Spanyie pockis," to the Queen's men during the jollities of Fastern's E'en and the reign of the Abbot of Unreason; and he closes his stanzas with an earnest advice to all to

"Bewar with that perillous play
That men callis libbing of the pockis."

The after effects and consequences of the disease he describes thus:—

"Sum, that war ryatous as rammis,
Ar now maad tame like ony lammis,
And sittin doune like scarye crockis,
And has forsakin all sic gammis,
As men ca' libbing of the pockis."

Gumbecht and Brandt, who wrote on syphilis in 1496, when speaking of the diffusion of the disease at that early date over Europe, both allude in very general terms to its having invaded France, Germany, etc., and reached as far as "Brittain." But the earliest specific notice of syphilis in England, which Dr Simpson remembered to have met with, is in 1502; and in this notice, the malady is spoken of under the name of "French pox." This notice is contained in the interesting Privy Purse Expense Book of Elizabeth of York, the Queen of King Henry VII., edited by Sir Harris Nicolas. This charitable lady seems, from the records in question, to have had several *protegés* under her immediate care and keeping. Among these *protegés* is entered John Pertriche, "one of the sonnes of mad Beale." There are various articles of expenditure successively noted in the Queen's private expense book as lavished upon this John Pertriche during the currency of 1502, as "monies for his dyetts," for "buying shirts," "shoyn," "hosyn," etc. There are twenty pence expended for his "learnying;" and the last two items in the account record attempts of two different and rather opposite kinds to amend the mental and moral deficiencies of this hopeful youth. The two ultimate items are, "For a prymer and saulter book (to John), xx pence;" and "Paid to a surgeon which healed him of the French pox, xx shillings."

In the second division of his paper, Dr Simpson observed that the preceding notices, however brief and imperfect, relative to the first introduction and dissemination of syphilis in this country, were not simply matters calculated to gratify mere antiquarian curiosity. They appeared to him to be capable of a much higher application; for they offered so many elements tending to illustrate the general history of the first appearance of syphilis in Europe, and justify us in drawing from the data they afford several not uninteresting nor unimportant corollaries in regard to the first origin and mode of propagation of the disease, and the distinction of it from other affections with which it has been confounded.

I. These notices tend to corroborate the pathological opinion that syphilis was a species of disease new to Europe when it first excited the attention of physicians and historians in the last years of the fifteenth century. If syphilis was new in Britain in the end of the fifteenth century, this shows—

II. That it is a species of disease distinct and different alike—1, from gonorrhœa, and 2, from Greek leprosy (with both of which maladies it has occasionally been confounded); for both these maladies existed and were abundantly recognised in this country long before the era of the introduction of syphilis.

III. As regards the mode or modes in which the disease was supposed to be so speedily propagated at its first appearance in Europe, the Aberdeen and Edinburgh records are both interesting, though they offer very opposite testimony on this point.

For some time after syphilis broke out, it was believed, both by the medical and non-medical public, that the disease was communicable, and constantly communicated from the infected to the healthy, by the employment of the clothes, vessels, baths, etc., used by those already suffering from it, and by the slightest corporeal contact, or even by breathing the same air with them. One of the gravest articles of guilt brought against Cardinal Wolsey, when he was arraigned by the House of Lords in 1529, consisted in the allegation that, to quote the *ipsissima verba* of the indictment, as laid before Henry VIII., "Whereas your Grace is our sovereign lord and head, in whom standeth all the surety and wealth of this realm, the same lord cardinal, knowing himself to have the foul and contagious disease of the great pox broken out upon him in divers places of his body, came daily to your Grace, rowning in your ear, and blowing upon your most noble Grace with his perilous and infective breath, to the marvellous danger of your Highness, if God of His infinite goodness had not better provided for your Highness," etc.

For several years after the first outburst of the disease, sexual intercourse with the infected does not seem to have been suspected by any one as the source and means by which the syphilitic contagion was propagated; nor was the primary affection of the sexual organs generally noticed by the authors of these times as a constant or marked symptom. They were acquainted with and described only the secondary symptoms of the malady—the hideous eruptions on the skin, the ulcers of the throat; the exostoses and nocturnal pains in the bones; while they mostly all pass over the genital organs, as if they remained unaffected. So much was this the case, that we find Montagnana in 1498 recommending, not as a means of infection, but as a means of cure, *moderate coition* (*coitus temperatus*). Montagnana speaks of having recommended the treatment in question (*coitus temperatus*) to a sick bishop under his care; and perhaps we may venture to guess that such a prescription would neither be the most disagreeable medicine in the world to one who had taken upon him the vows of St Benedict, nor the one least likely to extend Montagnana's practice among the same class of patients.

IV. The early notices (continued Dr Simpson) adduced of the appearance of syphilis in Scotland are curious, as proofs of the rapidity with which the disease travelled, at its first outbreak, over the kingdoms of Europe. The new malady was, as has already been stated, first distinctly recognised during the period that Charles VIII. of France occupied the city of Naples, or rather, immediately after he left that place. That Naples was the locality in which the contagion first spread so widely and rapidly as to be considered almost the source of the new epidemic; and further, that this happened at the precise date of the visit of the French army,—seems to be shown by the very designations respectively conferred at the time upon the new affection by the Neapolitans and French; for, while the French, as it is well known, designated it at its first commencement the Neapolitan disease, the Neapolitans, on the other hand, termed it the French disease. The army of Charles, in their march through Italy, arrived at Rome on December 4th, 1494, and entered Naples on February 21st, 1495; and, after remaining there three months, they evacuated the city on May 28th. On the 24th of the same month, the Spanish General Cordova landed in Sicily; on July 5th, the battle of Fuornove was fought; and next day King Ferdinand returned to Naples; but the last remnant of the French army did not reach France till the end of the following year. The Aberdeen edict, however, was issued within less than two years after Charles commenced his march homeward; or, to state the matter otherwise, Columbus arrived at Palos, in Andalusia, after his first voyage to the New World, on March 15th, 1493; and from his second voyage, in April 1496. The edict of the Aberdeen aldermen and council was passed on April 23d, 1497, or exactly four years and thirty-eight days from the date of Columbus' first return to Europe; while the famous edict of the Parisian authorities was issued on March 6th, 1497, only forty-eight days before that of Aberdeen.

The rapidity with which the disease spread from the south of Europe to its western confines has been often employed as an argument to show that the contagion of syphilis was propagated at its first introduction by laws different from those which now regulate its communication. In other words, it has often been alleged that the disease was then spread from kingdom to kingdom, and from city to city, by epidemic influence and by general contagion, and not merely by the slower medium of impure sexual connexion. When we look to the then existing state of society, both on the Continent and in our own country—to the loose manners and licentious lives—we shall probably find a sufficient solution of the at first sight difficult problem of the rapid dissemination of the new malady. The morals of the general mass of the people are ever found to be regulated by the example set before them by the aristocracy and clergy. At the date of the introduction of syphilis into Europe, the notorious habits of the two latter ruling bodies were assuredly such as to expedite the diffusion of the new scourge that had sprung up among them; and hence, at its first outbreak, we find the disease forcing itself upon several of the highest members of the Continental courts and church. The Emperor Charles V., Pope Alexander VI., kings and cardinals, princes and bishops, peers and priests, are recorded amongst its victims. As far as regarded the predisposing habits and influence of the clergy, at least, matters were not better in Britain than on the Continent, when the disease reached this country. There was openly inscribed over the door of Cardinal Wolsey's palace, "Domus Meretricium Domini Cardinalis." The manners of the inferior dignitaries of the church offered only too close an imitation of those of its primate. The commissioners appointed by Henry VIII. to visit the monasteries of England have recorded a sad and probably only a too true picture of the moral degeneracy of the great mass of the clergy of the time. With some few honourable and cheering exceptions, they found the occupants of most of the monasteries "following lives of degraded vice and licentiousness, instead of religious purity and exemplary rectitude. Accounts of their proceedings were transmitted by the visitor to the Vicar-General; and they contained sufficient material to render the monasteries "completely infamous for their gross, absurd superstition, their shameful impositions, their abandoned, unnatural incontinency," etc. Clerical morals and manners were not in a much better state on the Scottish side of the border. Queen Mary would seem to have regarded the health of the high Roman Church dignitary who baptized her son James with considerable suspicion; for she sent word to him to forbear to use the "spittle" on the occasion: "*she would not have a pokid priest to spit on her child's mouth.*" Very shortly before the commencement of syphilis, the dissolute manners of the English clergy, especially of the regulars, created such noise and commotion that Pope Innocent VIII. sent, in 1490, to Archbishop Merton, authorizing him to admonish his abbots and friars, "that, by their lewd and dissolute lives, they brought ruin upon their own souls, and set a bad example to others." When such was the scandalous life led by some of the clergy, we cannot wonder (concluded Dr Simpson) that, before the introduction of syphilis, Rabelais, himself at one time an ecclesiastic, should apply to gonorrhœa the very significant term of "rheume ecclesiastique;" or that, after the appearance of syphilis, this latter and greater malady should have spread speedily among all ranks, down from the clergy to the laity, and from the king to the church; and should have diffused itself by such stealthy and rapid steps over the countries of Europe as to have at first been mistaken for a malady spreading itself, *not* by impure intercourse, but by general epidemic influences.

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# Part First.

## ORIGINAL COMMUNICATIONS.

### ARTICLE I.—*On the Influence of Change of Posture on the Characters of Endocardial Murmurs; with an Attempt to Explain the Cause.* By SYDNEY RINGER, Esq., Medical Registrar to the Children's Hospital, Great Ormond Street, London.

AFTER a careful examination of a large number of mitral regurgitant, aortic obstructive and regurgitant murmurs, and one case of mitral obstructive, the following general proposition was found to hold good,—namely, that endocardial murmurs are louder, harsher, and lower pitched in the lying, than in the sitting or standing posture. One case of aortic obstructive disease differed from what is stated above, in being louder in the sitting posture. One case of mitral regurgitation and aortic obstruction was also an exception: this case will be again noticed further on. Excluding these two exceptions, the above given proposition was found to hold universally good.

These variations can be caused by either some alteration in the valves or part causing the murmur, or to some alteration in the force of the blood. It seems probable that it is due to the latter cause, and that the increased intensity and harshness, with the lowered pitch of the murmur, is due to the blood being then impelled with greater force. For, firstly, if an aorta be tied to a tap, and a murmur produced by a piece of twine tied round it, by increasing the force of the current, the murmur undergoes the alterations above stated; and, secondly, the force of the heart's contraction *is greater* lying than sitting, and sitting than standing, whilst the closest relationship exists between the frequency (*i.e.*, force) of the heart's impulse and these alterations in character of the murmur. It is well known that the frequency of the pulsations of the heart are increased in the sitting over the lying, and the standing over the sitting posture. This increased frequency is accompanied with a diminution in the force of the heart's contraction; moreover, the diminution in force is in proportion to the increased frequency. This conclusion was arrived at—first, by judging of the force of the radial artery by the fingers, and was found to hold good in all the subjects tried, with one exception, in whom no difference could be detected; but in this case no alteration in the frequency of the pulse was caused by an alteration in the posture of the patient. Secondly, as the above was a rather inaccurate method of judging, the following mode was adopted:—Patients with visible and tortuous arteries were examined in the different postures, when in every case the visibility with each impulse of the heart was decidedly less in the standing than in the sitting or lying postures. It may be objected to this, that visible arteries occur mostly in persons suffering from aortic regurgitant disease, and that, as gravitation would act more strongly in the sitting than in the lying posture, more blood would flow back into the heart; consequently less would be propelled, and the visibility would be diminished.[1] But the same diminution in the visibility of the artery occurred in patients who were free from aortic disease.[2] Moreover, in those cases in which aortic regurgitation occurred, there was found to be a diminution of the visibility of the pulse in the standing over the sitting posture, in both of which postures the effects of gravitation are the same on the heart. It is thus probable that the rapidity of the circulation is much the same in all the different postures.

Having thus shown that the increased frequency and force of the heart are somewhat in inverse proportion, it remains to be shown what connection there is between the frequency of the heart's impulse and the alterations in the characters of endocardial murmurs above described.

1. A woman presented herself with both mitral regurgitant and aortic obstructive murmur. In this woman the pulse was the same in frequency in both the sitting and lying postures. The murmurs were found to be the same in either posture.[3]

2. Patients who usually had the difference in both the pulse and murmurs well marked, were occasionally found to have their murmurs unaffected by position. At these times the pulse was found to be equally unaffected by position.

3. On making those patients who had the difference in both murmurs and pulse well marked exert themselves so that their pulse was unaffected by position, it was then found that their murmurs were equally unaffected.

4. Again, patients, especially children, were occasionally nervous and frightened at the examination. In these, it was found, both the pulse and murmurs were unaffected by change of posture; but as

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[1] For the idea of this source of fallacy I am indebted to Dr Jenner.

[2] My radial arteries are very superficial, and thus visible. The visibility is increased when I lie down.

[3] This patient is the exception referred to at the commencement of this paper.

their confidence became restored, the difference in the pulse manifested itself, and, *pari passu*, the murmurs also became affected by altered position.

5. In changing from one posture to the other, the alteration in frequency of the pulse gradually, and not instantaneously, manifested itself. So likewise the alteration in the murmurs became gradually manifest.

Thus, 1st, the experiment with the aorta and tap, and, 2d, the very close relation between the frequency (*i.e.*, force) of the heart's impulse and the alteration in the character of the murmurs, rendered it very probable that the alteration was due to altered force in the blood current, and not to any alteration in the condition of the valves. To set the question, however, quite at rest, the following method was adopted :—A tourniquet was applied to a man's axillary artery, and a murmur produced. This was found to be affected in all respects, by altered position, after the manner above stated.

The murmurs accompanying femoral aneurisms[1] were found to be similarly altered by a change of posture.

The alteration in the intensity of cardiac murmurs by a change of posture is often very great. As far as I have been able to ascertain, it affects mitral murmurs more than aortic. I have met with cases, indeed, in which well-marked mitral murmurs entirely disappeared on the patient assuming the erect posture.

Mitral murmurs are not of the same intensity nor pitch at the commencement and termination of the systole. Thus they increase in intensity and become heightened to their very termination. When very weak, they are audible only at the very termination of the heart's systole ; and when their intensity becomes, from any cause, as altered position or exertion, increased, they encroach on the systole from its termination towards its commencement till they are continuous with the whole of it, the termination remaining the loudest.

Can this increase in the intensity and elevation of pitch towards their termination be due to the rotation of the heart, by which its mitral orifice is brought more anteriorly? The rotation of the heart is probably so slight in amount, that it is difficult to conceive this possible. In confirmation, however, of this view, it may be stated that, when the murmur is listened to posteriorly—that is to say, at the angle of the scapula or close to the spine—the commencement of the murmur is most intense and highest pitched, the very reverse of what is heard in front, which would be expected, as the mitral orifice would be carried away from the posterior part of the spine.

Or may it be due to the heart being contracted, and consequently smaller, when the mitral orifice would be brought more anterior; or are both combined ? If the alteration be due to the rotation of the heart, then tricusped murmurs should be the reverse of mitral—namely, most intense at their commencement. But tricusped murmurs are often so covered with pulmonary rhonchi, that it is extremely difficult to listen attentively to them.

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[1] These femoral aneurisms were situated so low down, as probably not to be affected by any change in the pelvis brought about by the change of position.

## ON THE GENERATION OF MURMURS.

The experiments were made with an aorta attached to a tap, and a murmur produced by tying a piece of twine round it. By this means two murmurs were produced, one having its point of greatest intensity over the place of constriction, the other beyond this. The first was probably due to the constriction, the second to the waves produced in the water. The last was so strong, that it rendered the first inaudible in passing with the current; but it was distinctly audible for some distance in the opposite direction (towards the mouth of the tap). The first murmur was of a much softer character than the last, which was harsh, roaring, and grating. The first was audible till the stethoscope was placed beyond the point constricted, when the second louder one immediately became audible, and rendered the other inaudible. These two murmurs, and the suddenness with which you come from one to the other, will possibly account for those great and sudden variations sometimes observed on moving the stethoscope only a very small distance over the chest, and the point midway may, perhaps, be taken as the point of constriction. When the amount of constriction was kept the same, but the force of the current increased, the murmur, become lowered in pitch, increased in intensity and harshness.

If, however, the force of the current was kept the same whilst the ligature round the aorta was tightened, both the murmurs became much heightened in pitch. It has long been known that old murmurs are, as a rule, high pitched; but old murmurs are those also which are the most constricted, and the above experiment will thus probably explain this fact; and the elevation of pitch may, perhaps, be taken as a guide to the amount of constriction.

## ARTICLE II.—*Case of Amputation at the Middle of the Thigh for spreading Gangrene after Compound Fracture of the Leg, in which Acupressure was employed to secure the Arteries.* By JAMES STRUTHERS, M.D., Leith.

ON the 17th February 1860, J. D., æt. 40, a tall muscular man, while walking by the side of a trough in which a shaft was revolving rapidly, had his left foot caught by the driving belt, and the entire leg dragged under the shaft, by which he sustained a compound comminuted fracture of the bones of the leg. The foot was much bruised, as was also the thigh on its posterior aspect as far up as the hip. Before I reached the patient's house he had been attended to by Dr Gillespie of Leith, who had dressed the limb, and placed it neatly and comfortably in a M'Intyre splint; and also removed two pieces of the *tibia*, one of them an inch square, which were lying loose in the tissues. I found only one wound four inches long, situated at the middle of the leg in front, and crossing it obliquely. It was clean, and the edges only very slightly lacerated; there were considerable swelling and ecchymosis at the ankle and along the inner side of the leg; the circulation in the foot was unimpaired; and the patient had already rallied to a considerable extent from the shock of the injury. The question of immediate amputation was discussed by Dr Gillespie and myself, and decided in the negative.

On the 18th and 19th, the foot and leg became gradually more swollen; the patient complained of great pain in the foot; had little or no sleep; was restless and feverish; pulse 120.

21*st.*—The ankle and inner side of the leg had become much swollen; the skin over these parts was red, hot, and tense, and at one or two places tympanitic from decomposition of the effused blood having taken place; the lips of the wound were everted, and the exposed muscles were glazed and of a dark colour.

This state of matters was not promising; and I called Mr Spence in consultation. He advised not to amputate, but to give the patient still a chance of saving the limb; gangrene, though threatened, not having yet set in. Free incisions were made, giving exit to several ounces of bloody pus having a fœtid odour.

During the next three days there was little change in the appearance of the limb; there was a free discharge of fœtid pus from the incisions and from the wound; and, as the swelling did not increase much, I hoped that gangrene might be averted. The general condition of the patient, however, was not satisfactory; he complained of agonizing pains in the leg and foot; slept little, notwithstanding large doses of morphia; was restless and depressed; and the pulse 130.

On the 24th, the leg, from the ankle to near the knee, was more swollen; the bright red colour of the skin was changed to a dusky mottled appearance; the leg was colder than formerly, but the foot continued natural in colour and temperature. The wound was blackish and sloughy; the puriform discharge had ceased, and the skin for some inches around it crepitated on pressure, the parts being evidently gangrenous.

25*th.*—The whole limb, from the ankle to the knee, crepitated on pressure; the wound and incisions were sloughy, and the tissues there were dead; the skin over the knee was red, and crepitation was perceptible over the inner *condyle* and in the popliteal space. The patient had slept none for two nights; was very exhausted, occasionally delirious; pulse 130; countenance sallow and sunk. The limb being now gangrenous, and the gangrene spreading, the only chance of life lay in amputation; but, before operating, I again consulted Mr Spence; and he agreed with Dr Gillespie and me that there was a slight chance of preserving life by amputation, but certainly none without it. We were all of opinion that the case was a desperate one, and that the patient would almost certainly sink, whatever means were adopted. The patient willingly consented to the operation, which was performed early next morning, the 26th. The probability of my being obliged to have recourse to amputation in this case was apparent from the first; and I told Mr Spence that I should employ acupressure were an operation to become necessary. I asked Professor Simpson to be present at the operation; and had the benefit of his knowledge of acupressure, of which mode of stopping hæmorrhage I was only acquainted by reading what he had published on the subject. Drs Gillespie, Henderson, Alexander Simpson, Murray Thomson, and John Struthers, were also present, and rendered the necessary assistance. The patient was put under chloroform, a tourniquet applied to the upper part of the thigh, and pressure made over the *pubes* by the hand of an assistant. The patient being a strong muscular man, I preferred the circular to the flap operation. At the middle of the thigh, an anterior and posterior incision were made down to the deep *fascia*, the skin reflected for a couple of inches, and the muscles then divided in an upward direction down to the bone. This gave an excellent covering to the end of the bone, and prevented all bulging of muscle at the end of the stump. In dissecting back the posterior flap the skin and areolar tissue were found quite black and engorged with effused blood, but were free from actual gangrene. On the limb being removed, Dr Simpson passed a needle from the inner aspect of the thigh over the femoral artery, about an inch from its cut extremity, bringing its point out in front; the needle was passed with great ease, and, to the gratification of all present, completely stopped the flow of blood. The passing of this needle resembled, in rapidity and ease, the passing of an ordinary catheter, and satisfied every one present of the practicability and efficiency of acupressure as a means of arresting hæmorrhage. Five smaller needles were required to stop the other arteries, the mouths of which did not require to be sought for and pulled out, as it sufficed to pass the needle across the tract of the vessel, to which the bleeding point was a guide. The edges of the wound were brought together by some eight or nine points of silver suture; and in order to make the apposition of the surfaces as complete as possible, two small needles were passed from behind forwards through the skin flaps. The stump was dressed with lint and a few turns of bandage, so arranged as not to press on the points of the needles, only four of which protruded through the skin. The patient had stimulants given him before and subsequent to the operation; he was watched constantly during the day, in case of hæmorrhage occurring, by Dr Gillespie and Dr Murray Thomson, as I had to go to the country to see a patient. On my return in the evening I found the patient looking well, and entirely free from pain; there had been no hæmorrhage. He had a dose of morphia, and an ounce of wine every 4 hours; and was waited on throughout the night by Dr Thomson and myself, so that assistance might be at hand in the event of hæmorrhage occurring,—the safety of acupressure, when applied to such a large vessel as the femoral, being at that time unascertained, at least in the human subject.

*27th.*—Has slept occasionally during the night; has had no shivering; is free of pain; pulse 110, very compressible. There was some sanguineous oozing from the stump during the night, which ceased on slight pressure. To have 30 drops of the solution of morphia 2 or 3 times a day, and a full glass of wine every 3 or 4 hours.

*28th.*—Has had a restless night; has been delirious, and comprehends nothing that is said to him; utters complaints of pains in his "leg and toes;" has occasional jerking of the stump; p. 110, weak. To have wine more frequently, and essence of beef in large quantity; morphia as before.

*29th.*—Has had wandering delirium the greater part of the night; had some hours' sleep towards morning. Looks better to-day, and is now cheerful, helping himself to food; pulse 100, fuller; tongue moist; no headache or shivering. The dressings were undone at 11 A.M. to-day for the first time; all the needles, with the exception of the one securing the femoral artery, were removed. This was done with great ease, without complaint, and without the loss of a drop of blood; they were quite loose. From the points of entrance and exit of one of them a few drops of pus escaped. The femoral needle was also quite loose in its bed; a drop or two of pus escaped at its point, which was moved at each pulsation of the artery. Dr Simpson wished to withdraw this needle also, but at my request it was left in till next day, from an apprehension that hæmorrhage might possibly occur. About two ounces of pus escaped from the outer angle of the stump. The stump looked well on the anterior aspect, but on the posterior the edge of the flap, for the space of three inches by one, was sloughing. The whole of the posterior and outer surface of the thigh looked very suspicious, being quite black from ecchymosis (the result of the original injury); but there was no appearance of the gangrene spreading farther.

*March* 1.—The remaining needle was removed to-day at noon by Dr Simpson, having been 98 hours in situ. No blood, but a drop or two of pus followed. The patient has slept little last night; complains of pains in his "toes." There is a copious discharge of pus from the stump. To have two colocynth and hyoscyamus pills, the bowels not having moved since the operation. Pulse 100, no shivering, appetite good. Continue wine, morphia, etc., as before.

*2d.*—Has slept well; bowels moved twice after a dose of salts; is free of wandering; looks well, and is cheerful; complaint of pain slight. Stump looks well. At each of the needle orifices the cuticle is raised to the size of a pea, contains pus, and is surrounded by a red areola; these are smallest where the needles made least lateral pressure on the skin; a similar appearance exists at several of the silver sutures.

*3d.*—Has had a good night; bowels open; tongue cleaning; pulse 102, good; appetite good. To have Bass' ale and chicken. Alternate sutures removed; there is a free discharge from the stump; a drop or two of pus escape from each needle-hole on pressure; the slough on posterior flap is separating; the stump looks well.

*4th.*—Had an attack of purging last night, from which he has nearly sunk; to-day he wanders a good deal, and is much exhausted, requiring large quantities of wine; p. 110, weak.

*5th.*—Has had a good night; slept soundly; looks well and feels stronger;—stump looks well. From the 5th to the 10th he was under care of Dr Gillespie, while I was absent in London; and for the first two days required assiduous attention, in consequence of a tendency to diarrhœa and exhaustion, which rendered his recovery occasionally doubtful. On the 10th, I found him greatly improved, the slough separated, and the stump healing. From this date his convalesence presented the ordinary features to be met with in a case of amputation of the thigh, where the vital powers had been reduced to the lowest ebb. The stump, which is an excellent one, was entirely healed on the 5th of April.

*Remarks.*—The result of this case in a general point of view is highly satisfactory. To have amputated immediately after the accident would have been to sacrifice a very fair chance of preserving the limb, as the extent to which the tissues were seen to be lacerated, and the extent to which the bones were apparently injured, were both moderate, and such as are frequently followed by recovery with a sound limb. The occurrence of gangrene was, I believe, owing to the amount of crushing and stretching which the whole limb, as far as the hip, suffered from the manner in which the injury was received. Recovery after amputation through the thigh, where gangrene has spread upwards and invaded the tissues about the knee, is rather a rare occurrence;—one on which no surgeon can calculate; and which, in consultation on this case before the operation, none of us expected. The chief point of interest in this case, however, and that which has induced me to record it, is the employment of acupressure for closing the arteries, and for the first time the femoral artery. So far as this means of arresting hæmorrhage is concerned, a more satisfactory result could not have been obtained. Nothing could be simpler or easier than the passing of the needle over the femoral artery, as was done in this case; and to one who has not actually seen it, it is difficult to conceive how slight a degree of pressure is sufficient to close completely such a large vessel as the femoral, and to resist the jerking impulse which the closed end of the same artery exhibits when secured by the ordinary ligature. That the needle can close the femoral artery as completely and permanently as any ligature, is certain; that it can do so as safely, I believe; that it is as suitable in every case, remains to be proved by experience, and, so far as experience has gone, it seems to be so. So far as my observation goes, the employment of acupressure presupposes that the patient will be surrounded by all the appliances of a comfortable sick-bed, and that he be not likely to become violent or to require restraint. To employ acupressure, for instance, in a case of delirium tremens, in the case of a young child, or in a campaign where the patient has to be hurried about from place to place, would be to encounter risks with which the other method is not attended. So far as I have seen, or read, the needle has hitherto proved equally safe and effectual with the ligature; it may ultimately prove to be the better of the two; and is that which I should employ to-morrow, were a similar case to present itself.

The two points most in favour of the use of the needle are, the short time which it, as a foreign body, requires to be left in the tissues; and the greater probability which there is of union taking place by the first intention,—a result rarely obtained, but much to be desired, in large amputations. In the present case none of the needles were removed before three full days, and the one securing the femoral artery not before four full days, or 98 hours. Subsequent experience has shown that only one half the time was necessary; and I think that the suppuration which occurred along the tract of some of the needles in this case, would not have taken place had the needles been withdrawn at the end of the second day—the smaller ones, indeed, might have been withdrawn with safety even sooner. The early withdrawal of the needle may probably obviate the only objection to its employment in closing *large* vessels that occurred to me while watching this case, viz., that the jerking impulse of the artery, which by the old method expends itself in the open space between the flaps, is in acupressure communicated directly to the needle, and with such force as to cause the point to jerk slightly at each pulsation. The needle, being a rigid rod, must communicate this motion to the whole tract of sound tissue through which it passes, and may induce suppuration there. Further, the fact of the needle being thus constantly jerked, removes it in great measure from the category of non-irritant bodies, such as the needle in acupuncture, and needles which, accidentally introduced into the body, wander about under the influence of the natural motions of the parts. The sloughing of the edge of posterior flap in this case was in no way connected with the acupressure; the same thing took place, and to a greater extent, in a former case in which I amputated the lower extremity for a somewhat similar accident, and in which the ligature was employed. I have not had a case of amputation since this one; but some months ago I assisted my friend

Dr Henderson in performing Syme's operation at the ankle. The two largest vessels were secured by acupressure, while the ligature was found best adapted for two small ones which were situated close to the cut extremities of the bones. A fifth vessel began to bleed freely when we were about to close the stump, but could not be secured by the ligature, which always slipped owing to the dense nature of the tissue. This vessel was easily secured by Dr Henderson passing a small needle over its tract; affording a good illustration of the superiority, in certain circumstances, of the needle over the ligature.

LEITH, 18*th December* 1860.

## ARTICLE III.—*On Separation and Transplantation of the Ovary, due to Atrophy of the Broad Ligament and Fallopian Tube; and on the Spontaneous Separation of Sub-peritoneal Fibrous Tumours of the Uterus.* By WM. TURNER, M.B. Lond., Senior Demonstrator of Anatomy, University of Edinburgh.

A CASE having recently come under my notice in the dissecting-rooms of the University, which furnished an example of separation and transplantation of one of the ovaries, and of separation of a sub-peritoneal fibrous tumour of the uterus, I am induced to put it on record. The case is interesting, not only on account of the rarity of the pathological appearances which it presented, but from the important physiological and practical conclusions to which it tends.

CASE.[1]—Female, æt. 79. When the abdominal cavity was opened, and the omentum and coils of small intestine drawn to one side, a tumour, about the size of a well-grown fœtal head, was seen lying in the posterior part of the superior orifice of the pelvis, and rising for a short distance above the brim. The tumour was attached by its posterior surface to the peritoneum covering the anterior surfaces of the bodies of the last lumbar and first sacral vertebræ, and by its upper surface it was firmly adherent to the depending margin of the omentum. Through these connections, more especially the first named, it was retained in its position, only a slight amount of movement being permitted. When the tumour was drawn to one side, the cavity of the pelvis was exposed; and it was then seen that the uterus was displaced from its natural position, being no longer in the middle line, but drawn to the left side, its left margin slightly elevated and connected, along with the broad ligament, to the corresponding pelvic wall by strong adhesions. Numerous slender connecting bands also passed between the back of the uterus and the floor of the recto-vaginal fossa. The left Fallopian tube proceeded upwards and backwards from its proper uterine angle towards the left sacro-iliac joint, and, after a course of a little more than an inch, terminated in a free, pointed end. It contained in its interior a hard cretaceous style, and it presented no trace of a canal, which was apparently obliterated. For about one-half of its extent it was connected to the pelvic wall. No trace of an ovary could be found in connection with the broad ligament on this side.

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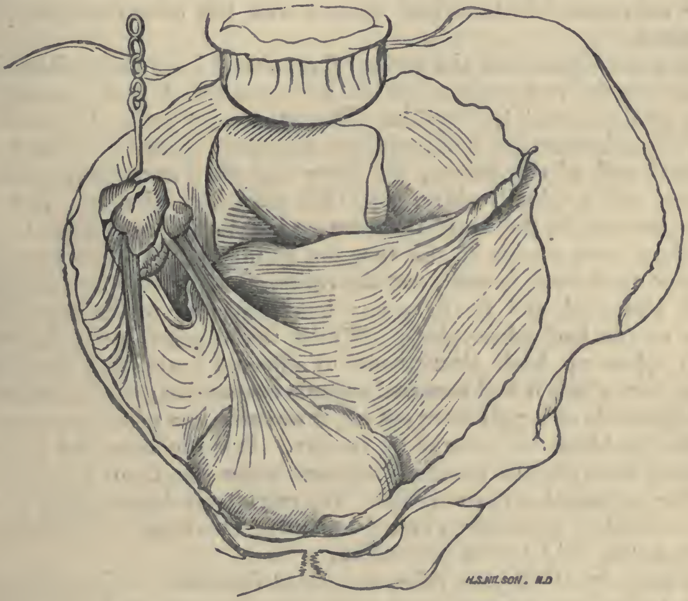
[1] The case was described, and the preparation illustrating it exhibited, to the Obstetrical Society of Edinburgh, Dec. 12, 1860.

Fig. 1.



BIRD'S-EYE VIEW OF THE PELVIC CAVITY AND VISCERA—ONE-HALF THE NATURAL SIZE.

Attention was again directed to the tumour, to see if it presented any indications of being the missing left ovary; and there was then found extending from its left extremity a rounded process, evidently the other portion of the Fallopian tube,—its canal, as in the uterine half, being occupied by a cretaceous style. When the tumour was removed from the body, by tearing through its omental and peritoneal connections, it was seen to present the characters of an enlarged and encysted ovary. Its external serous coat was smooth, except at the places of adhesion. Beneath this coat numerous blood-vessels could be traced, forming frequent communications with each other, as well as with the blood-vessels of the omentum, from which source it had evidently received its supply of blood. On cutting through the wall of the tumour, it was found to consist of a single large cyst, the cavity of which was filled with a soft, brown, pultaceous, fatty-like mass. The inner surface of the wall of the cyst was rough and irregular, owing to a number of calcareous plates being adherent to it, many of which were hanging loosely from the wall into the cavity of the cyst. There could be no question that this was the enlarged and separated ovary, which had become, through atrophy of the broad ligament and Fallopian tube, detached from its original connections, severed from its proper sources of vascular and nervous supply, deriving its blood from new channels through the adhesions which it had formed with the omentum and peritoneum.

An examination of the various facts that I have now related furnishes us with an explanation of the causes which had operated in the production of this result. The uterus, by some old attack of pelvic inflammation, had acquired adhesions to the floor and left lateral wall of the pelvis; the ovary had then undergone enlargement, and, gradually rising out of the pelvis, had dragged, so far as was practicable, the broad ligament and Fallopian tube after it; but as these were unable to rise very far, owing to the adhesion of the uterus to the pelvic wall, and the contraction of the adhesions, they had atrophied, and finally a complete separation of the ovary from the uterus had taken place. Whilst this was going on, the ovary had taken up fresh attachments to adjacent parts, with the blood-vessels of which it had acquired organic connection; so that, when its old channels of supply were cut off, it was still in a position to receive sufficient blood to preserve its vitality. It is probable that at some period the cyst had possessed a much larger size than it presented at the *post-mortem* examination. The calcareous degeneration which the walls had undergone, and the peculiar character of the contents of the cyst, tend to this conclusion.

The ovary, Fallopian tube, and broad ligament on the right side, had their normal relations to each other. Connected to the right half of the anterior surface of the uterus by a thin, broad band, its pedicle, was a calcareo-fibroid tumour about the size of a walnut.[1] It was attached by strong adhesions to the back of the bladder, the right pelvic wall, and the front of the corresponding broad ligament; with the last of which adhesions the fimbriated end of the right Fallopian tube had coalesced. Lying on the floor of the recto-vaginal pouch was a roundish tumour about the size of a hazel-nut. It was quite loose, having no connection whatever to the adjacent parts. Its structure was calcareo-fibroid. A third tumour of the same character, and of the size of a pea, was imbedded in adhesions on the floor of the recto-vaginal fossa. It is probable that these tumours had at one time been connected to the uterine walls, and that they afforded examples of detached sub-peritoneal fibrous growths. The last named may, however, have been developed in the midst of the fibrous adhesions in which it was situated.

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[1] In Fig. 1 this tumour is represented as if drawn upwards by the hook, so as to show distinctly the bands connecting it to adjacent parts.

The pathological changes which have now been described may be discussed under two heads :—1*st*, Separation and transplantation of the ovary; 2*d*, Separation of sub-peritoneal uterine fibrous tumours.

Very little attention appears to have been paid by pathologists to the class of cases coming under the first of these heads. I have examined the treatises on Pathological Anatomy of Meckel, Otto, Lobstein, Andral, Rokitansky, and Cruveilhier, and have not been able to meet with any notice of such cases. In the month of January, however, of the present year (1860), an elaborate essay was published by Rokitansky, "Upon Separation of the Fallopian Tubes and Ovaries, and upon Strangulation of the last through being twisted on their Axes."[1] In this paper, Rokitansky records several cases, which he considers capable of the following subdivision :—

1*st*. Atrophy and separation of a tube through the dragging of its ovary.

2*d*. Atrophy and separation of a tube through pseudo-membranous dragging.

3*d*. Separation of a tube, and of the ovary belonging to it, through pseudo-membranous dragging.

4*th*. Strangulation of the ovary and tube through being twisted on their axes.

Under the third of these subdivisions, which is the one to which my case must be referred, Rokitansky describes seven cases, all of which, with one exception, occurred on the left side,—in which respect my case followed the general rule. From the information which these cases afford, I append a short abstract of them.

1*st Case.—Separation of the Left Ovary and Tube; Degeneration of the former to a shrivelled, fatty cyst:*—Æt. 39. Died from metrorrhagia three weeks after childbirth. Right ovary large, and containing a pale corpus luteum. Left tube a mere stump, with a free, conical, blind end. No trace of the left ovary in its normal place; but lying somewhat to the right side of the floor of the recto-vaginal fossa, surrounded by pseudo-membrane, and fixed by it to the rectum, was a compact tuberous body, the size of a walnut, which for the most part consisted of a cyst, containing an opaque, brown, fatty pap, with shining epithelial lamellæ.

2*d Case.—Separation of the Left Ovary and Tube; Degeneration of the former to a shrivelled, hair-containing cyst:*—Æt. 23. Died of typhus. Uterus small, virgin, obliquely placed. Right ovary of ordinary size, situated within a pseudo-membranous investment, which reached close to the bottom of the recto-vaginal fossa, and which was connected to the rectum and posterior layer of the broad ligament. Its tube was, here and there, somewhat dilated, and generally adherent to the pseudo-membrane. Situated in the side of this membrane, and at its postero-superior part, was a capsule, about the size of a bean, with thick, hardened, bony walls. Its cavity contained short hairs, and a brownish colloid fluid. A broad band of pseudo-membrane reached from this capsule, and connected it to the uterine fundus, left broad ligament, and rectum. The left tube, permeable to a short distance at its uterine end, was turned towards the posterior wall of the uterus, and extended, as a thin string, to the capsule in which it was lost. There was no trace of the ovary in its normal place.

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[1] Ueber Abschnürung der Tuben und Ovarien, und über Strangulation der lesteren durch Achsendrehung.—*Allgem. Wiener Medizin. Zeitung*, Nos. 2, 3, 4, January 1860.

3d *Case.—Separation of the Left Tube and Ovary; the latter represented by an osseo-calcareous structure*:—Æt. 20. Died of typhus after childbed. Right ovary large, and containing a well-marked corpus luteum. No trace of left ovary in the normal place; its tube connected to the posterior lamella of the sigmoid meso-colon, which was, as it were, continuous with the left broad ligament. A structure, the size of a hazel-nut, somewhat compressed, and of a knotty, osseo-calcareous appearance (the left ovary), was adherent to the right broad ligament, a little below the right ovary.

4*th Case.—Separation of the Left Tube and Ovary*:—Æt. 14 days. Left ovary converted into a sac, the size of a hazel-nut, containing a brownish-red coagulum of blood. Connected to the left horn of the uterus was the stump of the threadlike Fallopian tube, but there was no trace of the left ovarian ligament. The ovary had, however, attached to it both a stump of the ovarian ligament and tube. The ovary was connected by a pseudo-membranous band to the posterior circumference of the upper sigmoid curve and its mesentery.

5*th Case.—Separation of the Ossified Left Ovary, with its Tube*:—Æt. 39. Dropsy, Bright's disease, etc. Uterus involved in a web of pseudo-membrane, which, as cords and bands, bridged over the pelvic inlet. Right tube twisted and buried in pseudo-membrane; its ovary large, knobby, wrinkled. Left tube projected about eight lines from the uterus, and then came to a point; it extended itself within a cord of false membrane, which passed from the circumference of the left side of the pelvic inlet, on to the symphysis, and at this point was united with the ovary itself; from this membrane a thick prolongation passed backwards to the rectum, whilst another band passed forwards and adhered to the horizontal ramus of the pubis. This ovary, of the size of a nut, connected to the symphysis, was ossified within a thick fibrous investment, and was connected by its anterior and upper part to the omentum.

6*th Case.—Separation of the Right Tube and of its Ovary degenerated to a large fatty sac*:—Æt. 26. Tuberculosis, diphtheria, etc. Left ovary wrinkled, coalesced with its tube. Right ovary, degenerated to a large cyst containing sebaceous lumps and hairs, situated in the hypogastrium, and connected by adhesions to the omentum, the abdominal wall in the right inguinal region, and to the mesentery in front of the lumbar vertebræ. Right tube extended from the uterus as a roundish string, coming to a conical point. Beyond this the continuation of the tube, as well as the connection of the ovarian cyst with the uterus, was completely lost. To the posterior part of the cyst the outer piece of tube, with its fringed end permeable, was attached; this was connected to the mesentery.

*7th Case.—Separation of the Left Tube and Ovary; the latter represented by a loose capsule:—*Æt. 18. Tubercular disease. Uterus small, virgin. Right ovary, with tube, normal. Left tube 1½ inch long, looking as if broken, and with a blind conical end; the outer portion, with the ovary and its ligament, was entirely absent. From the stump of the tube the broad ligament was continued outwards as an unoccupied duplicature; tufts of pseudo-membrane were connected to it. In the recto-vaginal fossa was situated a loose body, the size of a hazel-nut, which presented a fibrous capsule, filled with a fatty calcareous mass—the atrophied left ovary.

In all these cases, except the last, adhesions existed between the separated ovary and one or other of the adjacent structures: in the 1*st* and 2*d* cases, to the recto-vaginal fossa; in the 3*d* and 4*th*, to the sigmoid flexure; in the 5*th*, to the pubis, omentum, and rectum; and in the 6*th*, to the abdominal wall, omentum, and mesentery;—the adhesions in all being occasioned by peritoneal inflammation. In those cases in which the ovary was connected to portions of the intestine, the dragging inducing the separation would be produced by the alternate state of distention and relaxation, and by the movements of the alimentary canal. Rokitansky suggests that, in the 2*d*, 3*d*, and 4*th* cases, the adhesions were contracted very early, and the dragging would consequently be exercised by the growing uterus and the development of the pelvic cavity; in the 1*st* and 3*d* cases, the growth of the uterus during pregnancy would assist in the production of the same result. In every case the ovary was degenerated,—in the 1*st*, 2*d*, and 6*th* cases, presenting a fat-containing cyst; in the 3*d* and 5*th*, an ossified or osseo-calcareous structure; in the 4*th*, a sac filled with blood; and in the 7*th*, a loose capsule, containing a fatty, cretaceous mass. In the 4*th* case, it is probable, from the colour of the coagulum of blood, as well as the appearance of the false membrane, that the intra-ovarian bleeding, as well as the separation, had taken place during intra-uterine life.

From such a series of cases as have now been recorded, certain important practical and physiological conclusions may be drawn.

1*st*. That it is possible for a spontaneous separation of the ovary from its original connections to take place, this separation involving a severance of all its vessels and nerves.

2*d*. That, through inflammation of its outer coat, distinct attachments by means of false membrane to adjacent parts may occur. If, at the same time, a communication be established between the blood-vessels of the ovary and that of the part to which it adheres, as was seen in my case, and probably also existed in the 6*th* of Rokitansky's (although no mention is made by him of the state of the vessels), its vitality may be preserved. A natural transplantation is thus occasioned, not, as in the ordinary case of the Taliacotian operation, by the apposition of two raw surfaces, but of a nature similar to that which was experimentally illustrated by John Hunter,[1] when he cut out the testicles of a cock, and then replaced them in its belly, or even in the belly of a hen; adhesion between the smooth outer surface of the testicle and the peritoneal lining of the abdomen taking place, so that the nutrition of the former was effected. If, on the other hand, no, or only a very slight, vascular connection be established, then the ovary atrophies or becomes converted into a calcareous mass.

3*d*. The cases furnish us with illustrations of the influence exercised by peritoneal inflammation in the production of malformations —a doctrine, the importance of which, in its bearings upon the production of malformations in the fœtus, was first pointed out by Professor Simpson in his paper on "The Inflammatory Origin of some Varieties of Hernia and Malformation in the Fœtus."[2] In the 4*th* of Rokitansky's cases, and probably also in the 2*d* and 3*d*, the attack of peritonitis had occurred during intra-uterine life; and, as a result of this, malformation by displacement of the ovary was produced. My case, however, and certain of Rokitansky's (the 6*th* especially), point out that the production of malformation by displacement, and that even to a considerable extent, is not confined to intra-uterine life, but may take place even in the adult condition.

4*th*. The 6*th* case of Rokitansky, as well as my own, shows that separation of the ovary is not incompatible with a considerable increase in its size, sufficient to form an "ovarian tumour," lying in the region of the hypogastrium, and capable of being detected during life by external palpation.

5*th*. That the complete separation of one ovary with a part of its tube, provided the other ovary remains healthy and its tube pervious, is not incompatible with activity of conception. The 1*st* and 3*d* cases of Rokitansky corroborate this statement, for in both instances pregnancy had occurred shortly before the death of the individual.

6*th*. It is probable that, in the latter part of the lives of the majority of these persons, owing to the connection of the ovary with its proper nerves no longer existing, that the symptoms of its inflammation and enlargement, due to their irritation—which in the first instance had doubtless been present—would, when this separation took place, altogether disappear.

II. *Separation of Sub-peritoneal Uterine Fibrous Tumours.*—The loose tumour which was found lying on the floor of the recto-vaginal fossa, and the tumour connected by adhesive bands to the uterus, broad ligament, and bladder, in my case, must, I think, be regarded as structures which at one time were in close connection with the uterine wall. They may thus serve as illustrations of important changes which sometimes take place in the relations and connections of uterine fibrous tumours in cases of long standing.

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[1] *Works by Palmer*, vol. ii., p. 56.

[2] *Edinburgh Medical and Surgical Journal*, July 1839; and *Obstetric Works*, vol. ii., p. 190.

Through the kindness of Professors Goodsir and Simpson, I have obtained access to the numerous preparations of fibrous tumours of the uterus in the Anatomical and Midwifery Museums of the University, and of these I have availed myself in preparing the following description.

An important law of growth of this form of uterine tumour is its tendency to isolation. Accordingly we find that, when lying within the uterine wall, the tissues are generally so arranged around each tumour as to give the appearance of capsulation; when situated near the uterine cavity, the tumours exhibit a great disposition to project into it, to become pedunculated, and in some instances spontaneously to detach themselves; when placed near the peritoneal surface, to project into the pelvic cavity, become pedunculated, and occasionally to sever their connection with the uterus, either with or without assuming at the same time attachments to surrounding parts.

The sub-peritoneal fibrous tumour is generally met with at the uterine fundus, and may project either from the anterior or posterior surface. In 17 preparations that I have examined, tumours were found connected to the anterior surface in 14 instances, but in 6 of these they were met with projecting from the posterior surface also. In 12 cases they were seen to be in close relation to the upper margin of the uterus, in 2 of which they apparently projected from this margin itself, in the remaining 10 having a slight tendency either to the anterior or posterior aspect. From this it would appear that the uterine tissue which bounds the upper part of the cavity is especially liable to be the seat of these tumours. But a single one may be present, or they may be so numerous as entirely to alter the shape of the uterus. They vary in size between that of a small pea and the head of a well-grown child. They may exist as mere elevations on the peritoneal surface of the uterus; or they may be pedunculated, their pedicles varying greatly both in thickness and length.[1] These tumours exhibit a great tendency to undergo the calcareous form of degeneration, which may be general, or only partial. This degeneration has no necessary connection with the size of the tumour, and is not commensurate with its growth; but it appears to be in intimate relation to the size of the peduncle, and to the changes which take place, by obliteration or atrophy, of the vessels which pass from the substance of the uterus through the peduncle to the tumour. In preparation 1789, Anatomical Museum, we find a tumour the size of a child's head, which presents throughout almost its entire mass a distinctly fibroid aspect, with but a few spots of calcareous degeneration scattered within it. Its pedicle still remains 1 inch broad, and ¼ inch thick, and in it the vessels may be seen passing to the tumour. In the preparation from the collection of Dr Simpson, of which the following is a sketch, one-half the natural size, the tumour, not more than 2½ inches long and 1 inch broad, is converted into a dense, heavy, calcareous mass, knotty and tuberculated externally. Its pedicle, narrow and fibrous, connects it to the anterior surface of the uterus just below the upper margin. Preparation 1799 affords us an illustration of the extent to which calcareous degeneration may proceed. It consists of a section of a tumour, situated at the posterior part of the uterus, which in the entire state weighed 5 lbs. From its extreme hardness and compactness, it looks almost like a mass of ivory. From the history attached, it would not appear to have been productive of any inconvenience during life; but it caused death by compression and rupture of a fold of the ileum, consequent upon a fall on the pavement.

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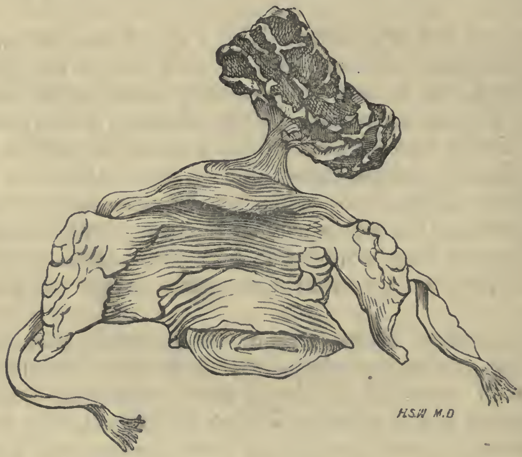
[1] Cruveilhier (*Traité d'Anatomie Pathologique*, vol. iii., p. 667) relates a case where the pedicle was so long that the tumour was situated in the right hypochondrium, and had been taken during life for the liver.

Fig. 2.



The normal condition of vascularity of these uterine tumours in their fibrous state is very well illustrated in several preparations, the vessels of which have been minutely injected by Professor Goodsir. Preparations 1780, 1781, consist of sections through a pedunculated sub-peritoneal tumour projecting from the uterine fundus. Vessels of considerable size may be seen ramifying beneath the peritoneal coat, continuous with those of the uterus through the thick pedicle.

In the substance of the tumour, lying in the laxer areolar intervals between the masses of more compact fibres, are several vascular trunks. The more compact tissue itself is comparatively pale, and the entire substance of the tumour exhibits a much smaller amount of vascularity than the body of the uterus to which it is connected. Evidence is thus afforded of a low state of vitality, such as would readily allow the calcareous degeneration to take place.

Should a sub-peritoneal tumour be attacked by inflammation of its peritoneal investment, and contract adhesions to surrounding parts, it is then placed in a position favourable to become separated from the uterus. This would be especially liable to occur if it became connected to a viscus, such as the bladder or rectum, which is constantly undergoing changes both in size and position. The alternate dilatations and contractions of these viscera would necessarily exercise a considerable traction upon the tumour, which would tend to produce elongation of the pedicle, and ultimately, should the cause be sufficiently long in operation, complete detachment from the uterus. Even if the tumour were to connect itself to a fixed part, as the os pubis, or other portion of the pelvic wall, and the uterus subsequently to become pregnant, the growing uterus, gradually rising into the abdomen, might exercise such an amount of traction upon the pedicle as to attenuate it even to complete separation. The entanglement of the tumour between the coils of small intestine which so frequently hang down into the pelvic cavity, even although no distinct attachments took place between them, would, during the peristaltic movements of the gut, exercise a certain amount of dragging upon it, especially if at the same time its pedicle became twisted. In those cases in which the tumours attain great size, or great density through calcareous degeneration, even without becoming connected to adjacent parts, their own weight might probably assist in producing attenuation of the pedicle; but, in estimating this as a cause productive of separation, we must always bear in mind the constant and reciprocal pressure exercised upon each other by the walls and contents of the entire abdominal cavity.

## ARTICLE IV. — *Clinical History of Three Cases of Placenta Prævia, in which Podalic Version was performed.* By D. LLOYD ROBERTS, M.D., M.R.C.S.L., and L.S.A.; on the Medical Staff of St Mary's Hospital for the Diseases of Women and Children, Manchester; Fellow and Hon. Local Sec. of the Obstetrical, and Corresponding Member of the Epidemiological, Societies of London, etc.

THE subject of unavoidable hæmorrhage is so important, so interesting, and so fraught with danger to the life of both mother and child, that I thought the narration of the following cases, together with the few remarks deduced from them, might prove acceptable to the readers of the *Edinburgh Medical Journal.*

Case I.—On February 7, 1859, at 7 p.m., I received a message to go to the assistance of Mrs Tootell, a midwife of St Mary's Hospital, in the labour of Bridget T., of 53, Loom Street, Oldham Road, æt. 22, married, who was flooding profusely. I proceeded at once; and on my introduction into the lying-in chamber, I found the patient laid on a wretched pallet, in a miserable state of poverty, without a change of linen, or even the common necessaries of life. My attention was directed by the midwife to a vessel filled with clotted blood, at least three quarts; the bed and bedding also being saturated. The patient's countenance was of an extremely pallid hue, pulse quick, intermitting, surface of the body cold, bedewed with perspiration; she was weary and restless, but cheerful. The vagina had been plugged. On the removal of the tampon, I made an examination, and found the os uteri dilated to about the size of a shilling, and dilatable, the placenta implanted and firmly attached over the whole surface of the cervix uteri. Some brandy and laudanum were administered; and I forwarded a request to my esteemed friend and colleague, Dr Stephens, to meet me in consultation;—he quickly arrived.

The woman by this time felt warmer and more comfortable; her pulse was fuller and stronger. It was therefore decided that I should insinuate my hand between the uterus and placenta, turn, and deliver the child; which was accordingly done. It was a male, of the usual size, still-born. The placenta was removed with very little hæmorrhage; the uterus contracted firmly. One drachm of tincture of opium, and twenty minims of tincture of Indian hemp, and some brandy, were administered. She made a quick and safe recovery. I may mention that she was delivered of a living child in the early part of 1860.

Case II.—On August 11, 1860, at 11.30 p.m., Mrs Bowers, midwife, despatched a messenger for my aid in the labour of Harriett W., of Salford, æt. 28, married. At the full period of her seventh pregnancy—all her previous confinements had terminated naturally, with the exception of one (a forceps case)—she had suffered from a smart hæmorrhage a fortnight ago. I was informed that the patient had retired to rest at 9 p.m., and that she awoke at 10, and found herself flooding. She at once sent for the midwife, who remained with her, and adopted means for stopping the hæmorrhage, which, however, recurred rather profusely in the course of an hour. I was therefore sent for; and on my entrance into the patient's bed-chamber, I found her partially ex-sanguine, her pulse quick; and on the removal of some cloths from the vagina, I ascertained upon examination that the os uteri was dilated just sufficient to allow the introduction of the tip of the finger, and situated very high up; the placenta could be felt lying obliquely across it, behind and to the right; there were no pains; the presentation could not be made out; there was no hæmorrhage, with the exception of a little trickling down the examining hand. I applied the tampon, and remained with her some time; after which, as she seemed inclined to sleep, I left her under the midwife's care, desiring the latter to send for me at once, in case anything occurred. At 3 the following morning I was again summoned, and was soon with the patient, whom I found blanched, and with an imperceptible pulse; so profuse and sudden had been the hæmorrhage, that it had completely soaked the bed and bedding, and there was no inconsiderable amount of blood on the floor.

I made an examination, and found the os but little further dilated. The hæmorrhage having now ceased, some brandy and tincture of opium were administered, and she had rallied surprisingly by 5.20. I again left her, instructing the midwife that, should the hæmorrhage recur, she was to rupture the membranes, and send off immediately for me. I also directed the brandy and laudanum which remained to be given *secundum artem.* At 3 p.m. I was informed that no hæmorrhage of any consequence had taken place since my departure, and that the woman was more comfortable. At 10 p.m. I renewed my visit, and found the os uteri a little more dilated, but very dilatable and flaccid; the membranes had not been ruptured. The presenting part, the vertex of the head, could now be felt; a piece of the placenta was hanging out of the os uteri; there was some hæmorrhage going on; and the pulsation of the fœtal heart could no longer be heard. With the concurrence of my friend, Mr Runcorn, of St Mary's Hospital, who accompanied me on this visit, I thought it advisable to turn and deliver at once; which I did with the greatest ease, owing to the relaxed state of the uterus. But little hæmorrhage occurred either during or after the operation; the placenta quickly following, and the uterus contracting with moderate firmness. Ninety minims of tinct. opii and twenty minims of tinct. of Indian hemp were administered in a little brandy and water. She progressed very favourably until the ninth day, when, by the advice of some friends, she got up and engaged herself in some housework. At 5 P.M. secondary hæmorrhage took place, and the husband (in breathless haste) came for me, saying that she was "dying." I at once repaired to the house, and found her almost pulseless; her countenance being of a deathlike hue, and the surface cold. On examination per vaginam, I found the os uteri patulous, its lips cushiony, and blood was felt issuing from the uterus. I administered some tinct. of Indian hemp, laudanum, and brandy, remaining with her until the hæmorrhage had ceased. She made a very slow and tedious recovery, extending over a period of four months.

CASE III.—On December 15, 1860, at 3.30 A.M., Mrs Harrison, midwife, requested my assistance at the labour of Ann H., of Rangal's Court, Newberry Street, æt. 20, married, who was said to be flooding. This was her first pregnancy, and she was only seven months advanced. She had suddenly begun to flood two hours before my visit. The midwife was sent for, and she suspecting "placenta prævia," despatched an urgent message for me. On my arrival, I found the patient a short thin woman, of nervous temperament; her face was pale and anxious; she was shivering severely; and flooding took place in gushes, at intervals, during the slight uterine action. The os uteri was very rigid, and dilated to the diameter of a shilling; the placenta completely covering it, and attached to the whole circumference of the cervix. She had not as yet lost any considerable amount of blood. I deemed it advisable to plug the vagina. This being done, I left her in charge of the midwife, desiring to be again sent for in the event of flooding or uterine action coming on. At 9.30 A.M., a messenger arrived with the intimation that my attendance was again requested, and I was soon at the bedside of the patient. The pains had commenced, and the flooding had returned, blood oozing away through the plug. I at once removed the tampon, and found the os uteri in the same state of dilatation as on my previous examination, but more dilatable. By carefully dilating the os uteri with three fingers (introduced seriatim) of my right hand, I succeeded in insinuating my hand into the uterus; the pains were much increased by my manipulation, and I had great difficulty in seizing a foot. I hooked my finger into the popliteal space of the child; more than the ordinary amount of tractive force was requisite in bringing the body externally. As the head was firmly retained within the os, as the hæmorrhage had now stopped, and as the funis had ceased to pulsate, I kept up gentle traction only, preferring that expulsion should be effected by the natural powers, rather than any risk of laceration should be incurred by the use of forcible traction. The usual dose of tincture of opium and Indian hemp was administered when the delivery was completed.

She recovered slowly, her convalescence being retarded evidently by the effects of loss of blood.

*Remarks.*—1*st.* The foregoing cases are demonstrative of the fact, that turning may be performed with safety to the mother when the os uteri is only dilated to the size of a shilling, provided only rigidity be absent; and that if we wait, as some obstetricians recommend, until it has attained the size of half-a-crown, the powers of the patient may in the meantime be so exhausted as to render recovery next to impossible.

2*d*. That the administration of full and decided doses of laudanum with Indian hemp, is beneficial in preventing the syncope which so often occurs after severe hæmorrhage.

3*d*. That where the child is dead, and version has been performed, and in cases where the os uteri is not sufficiently dilated to permit of the head passing easily, I would prefer keeping up gentle traction, and trusting to the natural powers, rather than making forcible attempts at extraction, and running any risk of lacerating the cervix uteri; as by the former means the head is brought to press more continuously upon the open vessels, thus preventing any further hæmorrhage.

## ARTICLE V.—*On the Waxy or Amyloid Form of Bright's Disease.*

By Dr T. GRAINGER STEWART.

(*Read before the Medico-Chirurgical Society of Edinburgh, Jan.* 9, 1861.)

I VENTURE to bring under your notice to-night the waxy or amyloid degeneration, as a constitutional malady, affecting different organs, and more particularly as constituting one form of Bright's disease. Having had numerous opportunities, while studying in Berlin under Professor Virchow, of examining pathologically the different forms of this disease—viz., the fatty, the waxy or amyloid, and the contracting kidney—I wished to know how to diagnose them during life. I examined the works of such authors upon the subject as I could get, but without being able to frame for myself a clinical history of the different forms. Last year, while resident physician in the Infirmary, I had occasion to observe many cases of Bright's disease; and these cases divided themselves, for the most part, into three well-marked classes, corresponding to the three chief pathological lesions of the kidney. By the kindness of Professors Bennett and Laycock, I am able to bring before the Society the history of some of these cases. I do not think that my own limited experience is sufficient to establish as certain the clinical history of the waxy degeneration which I shall lay before you; but, as every case has tended to confirm the opinions formed from the first few observations, I submit them to you, in the hope that those who have better powers and wider fields of observation will test my views by their experience. I am encouraged to think my views correct by finding recorded occasional isolated cases distinctly confirmatory of them, although those who recorded them were not led to draw any general conclusion. Among them I would mention one by Dr Wilks,[1] in the eighth volume of the Second Series of

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[1] *Guy's Hospital Reports.* Second Series. 8th vol., p. 261.

*Guy's Hospital Reports*, and one or two recorded, under the head of Scrofulous Liver, in Dr Budd's work on the diseases of that organ.[1] Dr Bennett, in his work on the *Principles and Practice of Medicine*,[2] narrates several good examples, and one in particular, as a case of Polydipsia, which he pointed out to the class as being exactly similar to the first case in which the group of symptoms which I associate with the waxy kidney attracted my attention. Drs Todd[3] and Johnson[4] record cases in so far confirmatory of my views; but the disease must be rare in London; for Dr Goodfellow,[5] who is at present publishing a course of lectures on Bright's disease in the *Medical Times and Gazette*, has not met with cases of it, and has only recently learned that it is sometimes associated with scrofula, caries, and necrosis.

The waxy, or amyloid degeneration, has been more or less accurately described by many authors; but of late much advance has been made in our knowledge of it. Rokitansky, who described it as the bacony or lardaceous (speckig) degeneration, regarded it as infiltration of albuminous matter. In our own school, it was named the waxy degeneration; and its microscopic anatomy was examined mainly by Drs Bennett, Gairdner, and Sanders.[6] Professor Virchow, of Berlin, having found that, in its chemical relations, the diseased tissue resembled cellulose, called it the amyloid degeneration; and Dr Heinrich Meckel, formerly prosector in the Charite Hospital in the same city, regarding the degenerated substance as a form of cholesterine, named it the cholesterine disease. The terms bacony and waxy were founded, as I shall endeavour to show, not upon the essential disease, but upon a result of it. The term amyloid degeneration has been preferred to that of the cholesterine disease, because it is chemically the more correct of the two.

When the degeneration is present to a considerable extent, it is easily to be recognised without the microscope,—the glands affected with it becoming enlarged in size, firm and dense in structure. Their cut surface is dry, smooth, and dimly transparent, and the whole is pale and anæmic. When examined microscopically, the tissues are seen to be pale or colourless, of a peculiar transparency, the cells appear somewhat shrivelled, the nuclei less distinct than natural, or not to be seen. It is associated with various wasting diseases—scrofula, caries, necrosis, phthisis, syphilis, perhaps chronic arthritis and cancer; but it may occur independently, in a person otherwise healthy. From an analysis of thirty cases collected by Dr Pagenstecher, I find, that in nine cases it was associated with caries or necrosis; in four, with phthisis; in six, with marasmus and a cachectic state independent of bone disease, but often with a scrofulous tendency; in eight cases, with constitutional syphilis; in two cases, without any complications.[1]

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[1] *Budd on the Diseases of the Liver*, p. 311.

[2] *Bennett on the Principles and Practice of Medicine.* Third Edition, pp. 799 and 974.

[3] *Todd's Clinical Lectures on Urinary Diseases*, p. 93.

[4] *Johnson on the Diseases of the Kidney*, p. 333 (the same case as recorded by Dr Budd).

[5] *Medical Times and Gazette*, Dec. 1, 1860, p. 524, and note *a* on same page.

[6] *Edinburgh Monthly Journal of Medical Science*, pp. 186 and 393.

In order to satisfy ourselves as to the true nature of this degeneration, we must first consider some general facts with regard to the existence in the human body of substances formerly believed to occur only in vegetable organisms.

We are indebted to Virchow for having first shown the existence in the human body of substances chemically related to starch and cellulose; he having ascertained that some of the small, round bodies, described by himself and Purkinje as occurring in the prostate gland and in the brain substance, became blue on the addition of iodine, while others assumed that colour only on the further addition of sulphuric acid. These he named respectively amyline and amyloid bodies, on account of their identity with or resemblance to starch corpuscles. In the prostate there are found other bodies in external appearance identical with the above mentioned, but which do not present the same reactions with iodine and sulphuric acid.

Virchow[2] further ascertained that the Malpighian bodies in the waxy spleen, which had been fully studied and described by Dr Sanders, presented the same reactions as the amyloid bodies,—that is, assumed a violet-blue colour on the application of iodine and sulphuric acid. Meckel[3] took up the subject, and showed that the substance possessing this peculiar property occurs in the waxy liver and kidneys, and also in the intestines. His observations were confirmed by Virchow, and the substance was further observed by him in the vessels throughout the whole digestive and urinary tracts, in lymphatic glands, in muscle, in the heart, in the uterus, in the inside of cartilages,—in fact, in almost all the tissues of the body.

But this substance, as it occurs in the body, generally is structurally quite different from the amyline and amyloid bodies of the prostate gland and the brain substance; for it does not present itself as masses distinctly layered like a starch granule, but is composed of a transparent and perfectly homogeneous mass, in which no structure can be made out.

The exact progress of the degeneration has been traced by Meckel and others. It commences in the delicate muscular fibres which surround the smaller arteries, and spreads to the other arterial coats. It leads to a thickening of these coats, and to a diminution of the lumen of the vessel, and afterwards spreads to the glandular or other structures supplied by the affected arteries. Thus, in the liver the hepatic cells, in the kidneys the Malpighian bodies, the basement membrane, and even the secreting epithelium of the uriniferous tubules undergo the degeneration.

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[1] *Ueber die Amyloide Degeneration.* Von Dr A. Pagenstecher. Wurzburg, 1858.

[2] *Cellular Pathologie*, p. 331.

[3] Meckel, *Die Speck oder Cholesterin Krankheit. Annalen des Charite Krankenshauses zu Berlin.* 4 Jahrgang, Heft 2, p. 264.

In the spleen the disease may not only commence in the arteries, but also in the Malpighian bodies, or in the fibrous stroma.[1] The lesion of the arteries and of the Malpighian bodies is most frequent, and the large pearly appearance of these structures has led to the application of the term, sago spleen. I need not say in this Society how much we are indebted to Dr Sanders for our knowledge of these lesions. In the lymphatic glands, the degeneration is confined mainly to the superficial parts, the tubes remaining generally free.[2] In the small intestine, the arteries of the villi are frequently affected, and, according to some observers, they become so far diseased as to drop off.[3]

A kidney which has undergone the waxy or amyloid degeneration is generally heavier, and larger than natural; its capsule is easily separable; the surface uniformly pale, or marbled here and there with red stellate vessels. On section, the cortical substance is seen relatively increased in size, pale and anæmic, of a dim waxy appearance, but containing, scattered here and there, small shining granules, the Malphigian tufts; the cones remain generally well marked, and present much their usual aspect. On microscopic examination of a thin slice from such an organ, one sees the Malpighian bodies remarkably pale and translucent, and the convoluted uriniferous tubules surrounding them filled to distension with a dense matter. On examining with a higher power, we see that the pale Malpighian bodies have a less definite form than natural, that the tufts of vessels are not to be recognised in them, as in the normal condition. The distended uriniferous tubules are seen to be filled with a dense matter, sometimes presenting no recognisable structure, at others showing epithelium in a state of fatty degeneration. There is no increase of the connective tissue of the organ. If one applies a solution of iodine to such a section, the whole immediately assumes the colour of that solution; but the Malpighian bodies, and the arteries leading to them, assume a peculiar reddish or orange colour, which, on the further addition of sulphuric acid, becomes changed into violet-blue, or purple, or more generally into a peculiar reddish-purple hue. It often happens that one does not succeed in bringing out the true violet-blue colour; but I have never failed to obtain the reddish-purple hue, and it seems to me to be equally characteristic of the degeneration. At times, besides the Malpighian bodies, and the arteries supplying them, the peculiar colour is developed in the vessels of the cones, and, though more rarely, in the basement membrane—and even, it is said, in the epithelium of the uriniferous tubules.[1] Of this fact I have never been able quite to satisfy myself, and it does not seem to have been noticed by many observers.

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[1] See a paper by Dr G. Wilks, in *Guy's Hospital Reports*, Third Series, vol. 2, p. 124.

[2] Pagenstecher, *Op. Cit.*, p. 27, quotes *Virchow's Archives*, B. 8, S. 346.

[3] *Ibid.*, p. 26.

Now, as the production of this colour, by iodine and sulphuric acid, is characteristic of a change in the chemical constitution of the parts assuming it, and as it only occurs in certain limited parts of the diseased structure, it evidently does not constitute the whole morbid change. In almost every case, organs affected with this degeneration are enlarged and hardened to a degree that cannot be explained by the mere change in the arteries and Malpighian bodies. How, then, is this increase of size and of density to be accounted for? Manifestly, I think, by the infiltration of the whole organ with some dense pale matter, evidently not amyloid in its character, because presenting no special reaction with iodine and sulphuric acid. This fact will be quite apparent to any one who examines the structure microscopically, or even with a lens; for the shining Malpighian bodies are only scattered here and there among the dim, dense, pale tissues of the cortical substance,—and if one brushes a little solution of iodine over the surface, it will at once be seen how small a part of the whole structure is composed of the little red dots and streaks which mark the amyloid degeneration.

The further question then arises as to the nature of this matter which constitutes the greater part of the degenerated tissue. I think that it consists of a coagulated exudation, whose transmission through the walls of the vessels has been favoured by their degenerated condition. This view is supported both by pathological and clinical observation. The convoluted uriniferous tubules are filled with a substance quite distinct from that deposited in the arterial walls and the Malpighian bodies, and closely resembling the exuded matter which we see in other forms of renal disease. If we squeeze out from a waxy kidney the substance filling the tubules, we find it exactly similar to the tubecasts found in the urine during life. These tubecasts first occur in such cases shortly after albuminuria has come on, and they continue to increase in quantity as the case advances. I have never seen any distinct reaction in the tubecasts on the application of iodine and sulphuric acid.[2] From these considerations, we may assume that this matter in the tubes is in reality a coagulated exudation.

It may be said that this exudation is simply a result of acute or chronic nephritis supervening upon the amyloid degeneration, because we sometimes see kidneys whose vessels have undergone amyloid degeneration without any increase of size. But the fact, that in a large majority of cases the organs are enlarged, taken along with the very gradual progress of the symptoms, seems to me to warrant the rejection of the view. The origin of the exudation would seem to depend upon two causes: first, the pale translucent arterial coats probably admit of a freer transudation of the fluid part of the blood than natural; and, second, when the circulation has become embarrassed in some parts by the diminution of the calibre of the vessels from extreme degeneration, there must arise an overfilling of other vessels, and consequent transudation.

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[1] *Pagenstecher*, p. 25; also, *Foerster's Atlas der Mikroskopischen Pathologischen Anatomie*, 1859, Plate 36, fig. 2, and letterpress.

[2] Dr D. R. Haldane informs me that he has occasionally brought out this reaction in the tubecasts.

Thus I have endeavoured to show that the waxy degeneration consists of a change in the chemical constitution of the walls of some of the vessels, with a consequent exudation of the fluid part of the blood into the tissues surrounding them.

As to the nature of the substance deposited in the coats of the arteries, two views have been held: viz., that of Meckel, that it is cholesterine, or a form of it; and that of Virchow, that it is cellulose. Meckel founded his view mainly upon the reactions; but Virchow showed that the substance differed from cholesterine in many particulars,[1] and that even in reaction they did not correspond, for cholesterine remains unchanged in colour with iodine alone, and thus differs from this matter, whose reactions are identical with those of cellulose. I shall not enter further into this question, but pass on to the clinical history.

I do not think it necessary to trouble the Society with details of many cases, but shall simply state the general result, and quote one or two cases as examples. The history of general cases of waxy or amyloid degeneration which I have observed is the following:—An individual who has long suffered from wasting disease, such as scrofula, caries, necrosis, or syphilis, or who, though without palpable disease, is of a feeble constitution, feels an increasing weakness, and begins to pass large quantities of urine and to drink largely. He is, contrary to his usual custom, obliged to rise repeatedly during the night to make water, and on each occasion passes a considerable quantity. The amount of urine varies from 50 to upwards of 200 ounces daily, always bearing a relation to the amount of fluid drunk, generally nearly equalling it in amount, or sometimes even exceeding it. The feet and ankles become œdematous after a hard day's work, but return to their natural condition during the night's repose. In many cases there is observed a hardness and swelling in the hepatic and splenic regions, dependent upon an increase of bulk of the liver and spleen. Patient feels a constant lassitude and unfitness for exertion. His urine gradually becomes albuminous, and a few waxy or hyaline tubecasts are to be found in the very scanty sediment which it throws down. It is of low specific gravity—1005 to 1015. The blood presents some peculiarities microscopically, the white corpuscles being somewhat increased in number, and the red presenting a flabby appearance, with a marked tendency to tail,—that is to say, instead of forming into rouleaux, like healthy corpuscles, they become stretched out into long, spindle-shaped bodies. The blood changes I have observed only when the degeneration affected the lymphatic or blood glands. The patient may continue in this state for months, or even years—may, indeed, undergo a temporary improvement—the liver and spleen becoming diminished in bulk, and the blood resuming a more healthy character; but, sooner or later, for the most part ascites and general dropsy gradually supervene, accompanied frequently by diarrhœa, which is at times found quite uncontrollable. The urine, now very albuminous, diminishes in quantity, so as at times to be almost or altogether suppressed; effusions into the serous cavities, or severe bronchitis, ensue; the patient becomes exhausted, and sinks; or drowsiness comes on, and the disease terminates fatally, amid coma and convulsions.

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[1] *Cellular Pathologie*, p. 335.

Let us now examine some of these symptoms more in detail.

1. *The Amount of Urine.*—It has been remarked that increased amount of this secretion is one of the earliest symptoms of the amyloid degeneration. In describing the minute pathological anatomy of the kidneys in this disease, I stated that H. Meckel showed that the degeneration occurs first in the small, non-voluntary muscular fibres which surround the smaller arteries. The function of these muscular bands is to regulate the supply of blood to a part; and if their structure be degenerated, it is evident that this regulating power must be lost, and the vessels and the capillaries beyond them become dilated. In this state, transudation of the watery part of the blood must take place more freely than usual, and consequently the urine would be increased in quantity. Now this is exactly what we find in the first stage of the waxy degeneration. That this increase of urine is not merely a result of the increased thirst which accompanies it, is shown by the fact, of which I have repeatedly satisfied myself, that the amount of urine passed was greater than the ascertainable fluids consumed during 24 hours. The urine is also of low specific gravity—1005 to 1015. This does not seem to depend upon a diminution of the actual amount of solids excreted, but merely upon the extreme dilution of these solids in the greatly-increased fluid. Of course, the amount of urine is affected to a considerable degree by diarrhœa or other complications. Thus, in a case which Dr Todd records,[1] the amount of urine never rose higher than 4 pints, and averaged about 2, apparently because the patient suffered from constant diarrhœa. But towards the termination of the disease the urine becomes diminished in quantity, while the albumen and tubecasts relatively increase. This is evidently caused by the blocking-up of the tubuli uriniferi, so as to prevent the passage outwards of the fluid secreted; and also may in part be accounted for by the great diminution which ultimately takes place in the calibre of the affected arteries.

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[1] *Todd's Clinical Lectures on Urinary Diseases*, p. 93.

That in the early stage of waxy or amyloid degeneration the urine is passed in greatly increased quantity, has not, so far as I know, been previously remarked. Dr Johnson,[1] indeed, states, in his most recent paper, that the urine secreted by the large white kidney is less abundant, and of higher specific gravity, than that secreted by the contracting kidney; but perhaps, by the term large white kidney, he means merely the fatty degenerated organ. Dr Bennett pointed out to me that in some cases there is a much larger amount of urine passed than in others, but he did not seem to associate this with any particular lesion.

2. *The Albumen and the Deposits in the Urine.*—In the earliest stages of the disease there may be no albumen in the urine, or only a trace of it; but, when it has appeared, it seems to go on gradually increasing. Soon after its first appearance we may detect, by very careful examination, a few fine hyaline casts, and these increase correspondingly to the albumen. The state of the arteries and Malpighian bodies affords a clear explanation of the symptoms; for I think it may fairly be assumed that their degenerated translucent walls allow the transudation not only of the watery part of the blood, but of the albumen and fibrin, and that these pass off in the urine, or become coagulated and block up the tubes, forming plugs, which are afterwards removed, and appear in the urine as tubecasts. Sometimes the casts contain fatty cells involved in them, the cells having become imbedded in the cast, and being no longer functionally active, undergoing the fatty degeneration.

It is apparent that tubecasts cannot be considered diagnostic, for fatty cells do not necessarily disprove the existence of waxy or amyloid degeneration; and, on the other hand, we frequently find, in advanced fatty degeneration, hyaline or waxy casts. I have very frequently examined tubecasts, to see if I could get the amyloid reaction, either from the transparent casts themselves, or from the cells involved in them, but have never succeeded in obtaining it.

3. *Dropsy* is not an early nor a very prominent symptom of this disease, occurring mainly in the later stages. It may depend upon various causes—viz., as suggested by Virchow, upon the unhealthy condition of the blood consequent upon disease of the blood-forming glands; or, as Dr Johnson suggests, upon the retention in the blood of salts which, during health, are carried off by the kidneys. It may depend upon the great enlargement of the liver and spleen, which frequently occurs in the disease; but mainly, doubtless, it results from the state of the kidneys themselves, for the dropsy only comes on coincidently with the diminution of the amount of urine, the cause of which has been already considered.

4. *The Blood.*—The characters which I have ascribed to the blood are not constant in this disease; but I have met with them

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[1] Dr Johnson in *Medico-Chirurgical Transactions*, vol. 42, p. 153.

well marked in two instances. In both of these there was an evident enlargement of the spleen, and in one, also an enlargement of some of the cervical glands. What the exact condition of these glands may be, which leads to the change in the state of the blood, has not been ascertained, and the point remains for further investigation.

5. *Diarrhœa* is a frequent and severe symptom of this disease, and may, I think, be reasonably supposed to depend upon the degeneration of the arteries of the intestines. Virchow mentions that he has seen the smaller arteries throughout the whole intestinal canal, from the mouth to the anus, in a state of amyloid degeneration; and when we consider the frequency of vomiting and diarrhœa in such cases, without any other lesion being found to account for them, we are, I think, warranted in ascribing these symptoms to the degeneration. In support of this opinion, I can quote the authority of Virchow himself, who has repeatedly observed the symptoms.[1]

It is unnecessary to enter into a consideration of the nervous symptoms which frequently occur, as they are identical in their nature and causes with those in the other forms of renal disease, and are not confined to the waxy or amyloid degeneration in particular.

Having thus shown how the symptoms I have described perfectly accord with the known pathological lesions, I pass on to relate one or two cases, with a view to bring some points more prominently forward.

Case I.—Mary Muirhead, æt. 17, admitted to Ward XI., on March 3, 1860. She states, that at the age of five she lost the power of her lower limbs, and that shortly afterwards an abscess formed on her back, between the shoulders, and ultimately burst. It remained open and discharging for a long time, almost till admission. On the very day it burst, she recovered the use of her limbs. Her spinal column is bent outwards, at an acute angle, opposite the second dorsal vertebra. She states that, excepting this abscess and continued discharge, she has enjoyed general immunity from disease and the usual children's complaints.

Four years ago she had scarlatina, but has since been in her usual health. She has never been able to walk or work much, and was subject occasionally, in the warm summer weather, to severe frontal headaches, which, in her early years, occasionally kept her from school a month at a time. Her respiration was always difficult on exertion, and this has increased during the last three months, since which time she has had cough, at first short and dry, but more recently accompanied by sputum. The patient states that since January she has been subject to lumbar pains, at times so severe as to prevent her working. A month after this, or three weeks previous to admission, she observed that she was passing a much larger amount of urine than was natural, and at the same time her ankles became œdematous, and her face at times puffy. Her weakness increasing, she applied for and obtained admission to the Infirmary. On admission, heart sounds healthy; pulse 100, small and feeble. There was considerable harshness of respiratory murmurs all over the chest. Tongue clean, but rather dry; thirst great; appetite good; bowels regular; slight ascites; the liver and spleen not enlarged; legs slightly œdematous; skin pale and dry. Urine was copious, about 50 to 70 oz. per diem; sp. gr. 1005; containing much albumen and few chlorides. A sediment was deposited on standing, which contained numerous hyaline tubecasts, involving here and there a cell which had undergone fatty degeneration.

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[1] *Cellular Pathologie*, p. 340.

Patient remained under observation without much change for two months, during which time her urine ranged from 50 to 120 oz. daily. On only two occasions during these two months did it fall below 50 oz. I repeatedly tested the casts with iodine and sulphuric acid, but without ever producing a reddish-purple or blue colour. The ascites gradually increased. About the beginning of May she was seized with diarrhœa, with increased cough and dyspnœa, and with advancing dropsy of the legs and abdomen. The daily amount of urine fell to 30 or 40 oz., very albuminous, and containing casts with more fatty renal cells than formerly. She died exhausted on May 20th.

On examination, the lungs were found free from tubercle, but the bronchi congested and full of mucus. Heart small, weighing less than 4 oz.; spleen large and waxy; liver large and waxy, weighing 1 lb. 15 oz.; kidneys large, weighing together 13½ oz. The cortical substance was very pale, and distinctly presenting the characters of the waxy or amyloid degeneration, both in mass and when examined microscopically, and with the chemical reagents. There was no ulceration of the intestines.

In this well-marked case it will be observed that there was a weakly constitution, with a constant, long-continued, purulent discharge from a carious bone, with increase of urine and gradually supervening dropsy.

I shall now relate the history of another case which was for many weeks under observation in the Clinical Wards.

Case II.—Anne Walker, æt. 37, single, a bootbinder, resident in Edinburgh, admitted April 30, 1860. She states that for many years she has been accustomed to take alcoholic drinks in large quantity, and has been subject to rheumatism; that three years ago she had rheumatic fever, and has since been subject to a short dry cough, with great debility, which has lately prevented her working. Three months ago she was seized with cramp in the legs, with pain in the lumbar and hepatic regions; and noticed that she had considerable thirst, and passed large quantities of urine—much more, she thinks, than she did on admission to the Infirmary. She soon noticed her feet swell, and afterwards her legs and abdomen, but without any rigor, headache, or other acute symptom. On account of the swelling, she sought admission to the Infirmary.

On admission, there was great capillary development over each malar bone, the eyes were suffused, the legs and thighs œdematous, and the abdomen slightly distended. There was dulness on percussion at the base of both lungs posteriorly, with feebleness of respiration and increased vocal resonance; considerable bronchial rattles on both sides. She had a frequent hard cough. Appetite good, tongue slightly furred, thirst great. Liver and spleen not enlarged, so far as could be made out in the state of the abdomen. Bowels constipated. Catamenia appeared last week, for the first time since August. Urine distinctly albuminous, ranging in amount from 74 to 130 oz. per diem; sp. gr. 1005, containing some hyaline and faintly granular tubecasts. Cardiac sounds were healthy, but feeble; pulse feeble. She was put upon general stimulant and tonic treatment, with good diet, but became steadily worse. On the 27th of May she was attacked with diarrhœa; and the amount of urine diminished from about 70 or 80 oz. to 30 or 40, and even less, although, from the state of the bowels, it was often impossible to estimate it. The diarrhœa could not be got to yield, and weakness constantly increased till the 10th of June, when she died. For the last two or three days of her life she was drowsy, and passed her urine and fæces involuntarily in bed, but could always be roused to answer questions. She had no tendency to convulsions.

On *post-mortem* examination, the lungs were almost healthy; heart had a small fibrous mass on the cardiac surface of one of the aortic valves. In the middle of the abdomen the parts were found matted together by a cancerous mass, and in the uterus there was a slight cancerous deposit. The liver, spleen, and kidneys were all distinctly waxy. All the lymphatic glands of the abdomen were enlarged. The left supra-renal capsule was filled with cancerous fluid.

In this case it will be observed that I have not dwelt upon the diagnoses, which were made during life, of the cancerous lesion of the abdomen, and of the deposit on the aortic valve, because these were not essential to the case in the light in which we have to consider it. Still it is important to bear the complication with cancer in mind, as it may be found that it also predisposes to the amyloid degeneration.

I shall now relate two cases in which the symptoms were quite chronic, and which have not as yet proved fatal.

Case III.—Edward Burns, a labourer, æt. 30, married, resident in Edinburgh, admitted to Paton's Ward, January 12, 1860. Patient states that he has had very little sickness, and, in particular, never had syphilis; but he confesses to have suffered from bubos, resulting from a strain; and his prepuce is remarkably contracted, and his throat presents most syphilitic-looking ulcerations.

On admission, his throat was ulcerated, his voice was husky, and he had a harsh cough, with occasional muco-purulent expectoration. At the apex of the right lung there was harshness of respiration, but no increase of vocal resonance; cardiac sounds normal; pulse 80, small and feeble. Blood poor in corpuscles; the white relatively more numerous; the red pale and flabby, with a tendency to tail, and form into rows like a string of beads rather than a rouleau of coins. Tongue clean; appetite pretty good; bowels open. Hepatic dulness extends from the sixth rib to the umbilicus. The spleen is also considerably enlarged. The urine is highly albuminous, of low specific gravity, and contains a few waxy tubecasts. Patient stated that he never observed anything particular about his urine; but on its being, by Dr Bennett's direction, measured, it was found to amount to upwards of 100 oz. daily. It was always of low sp. gr., and never contained a trace of sugar. There was no œdema of the legs, unless occasionally, when he had been working hard, and then his ankles got swollen at night. He continued under treatment for about four months, during which his general health improved, and his liver diminished slightly in size. The amount of urine became somewhat lower, and his blood presented a more healthy appearance. He was dismissed, at his own request, on April 30th; and since that has been able to work, though, when last seen, he was looking much worse than when he left the house.

In this case it will be observed that we have very distinctly marked the series of symptoms which have been already described, viz., the increased flow of albuminous urine of a low specific gravity, the absence of dropsy, the enlargement of the liver and spleen, and the morbid state of the blood, following syphilis.

The next case is similar to that just recorded, and continues still under observation; but it is interesting in that a diagnosis of amyloid degeneration of the kidneys was made before albumen had appeared in the urine.

Case IV.—Archibald March, æt. 29, a shoemaker, married, resident in Edinburgh, was admitted to Paton's Ward, February 15, 1860.

In April 1859 patient was in the Infirmary on account of enlargement of the liver and spleen, with slight leucocythæmia. He was dismissed considerably relieved; but having felt, of late, great oppression on taking food, with occasional bloody vomitings and increasing general debility, he was readmitted. States that, some years since, he had syphilis, which was followed by eruptions, nodes, etc., and ultimately by the symptoms of which he now complains.

*Symptoms on Admission.*—His general appearance is cachectic and sallow; his chest covered with brownish patches of pityriasis nigra, which have existed for some years. There is no œdema. Pulse is full, 82 per minute. Cardiac dulness 2½ inches transversely. There is a soft blowing murmur, with the first sound, loudest at the base. There is a slight relative increase of the colourless corpuscles of the blood, and the red corpuscles have a tendency to tail. Tongue is moist; appetite not good; thirst great. He vomits occasionally after eating. Bowels constipated. The liver measures 9 inches in a line vertical to the nipple; and there is great tenderness on pressure over the whole area of dulness. The splenic dulness, laterally, is 5½ inches from above downwards. Urine was of a pale amber colour; specific gravity 1009; no albumen. Such was his state on admission. He remained for some time under observation; and on March 3d it was ascertained that his urine amounted to 110 ounces daily, and it continued at a similarly high standard, sometimes falling as low as 90 and rising as high as 130 ounces. Finding the amount of urine so large, and the general symptoms so closely resembling those I have just read, I ventured to anticipate the appearance of albumen in the urine. It was carefully tested day by day, and about the 10th of March a trace of albumen was observable. It steadily increased in amount; and, soon after its appearance, a very few waxy or hyaline casts were to be detected by the microscope. Notwithstanding the increased flow of albumen, the patient, under a tonic treatment, with liberal diet, so far improved as to be able to leave the hospital, to resume work, on March 26th. I have seen him at intervals since that time; and, when I last examined him, the following was his condition:—

*December* 3.—His complexion sallow and cachectic as before; abdomen free from tenderness; liver measures, in line of right nipple, 7½ inches, and the spleen barely 5 inches at the side. He does not know exactly how much water he makes daily, but thinks it is less than when he was in the Infirmary. It is distinctly albuminous. No dropsy. The glands of the neck on both sides have become enlarged within the last ten days. The blood is in the same condition as formerly. Thus it is evident that, except in regard to the kidneys, considerable improvement had taken place.

The cases which I have given illustrate, I think, sufficiently the history and symptoms of the amyloid degeneration; and I now proceed to say a few words concerning the treatment, and that resolves itself into a few simple rules, viz.:—While the degeneration is in progress, good diet, with tonics, produce sometimes most favourable results, as in the cases of Burns and March; and a course of iodide of potassium has been followed, in the latter case, by a considerable diminution of the bulk of organs affected. In the latter stages, when the tubes have become obstructed, the amount of urine diminished, and dropsy supervened, with exhausting diarrhœa, and perhaps a threatening of head symptoms, we have, of course, little hope of improvement; but life may be prolonged, in some instances, by favouring the diarrhœa, by stimulating the kidneys by means of powerful diuretics, and causing the removal of fluid by the skin, at the same time supporting the strength of the patient by all means in our power. For it will be observed that the condition produced in the last stage of amyloid degeneration is essentially in relation to symptoms identical with that proceeding from the fatty disease.

I subjoin a brief recapitulation of the leading symptoms of the cases of waxy or amyloid degeneration which have come under my notice.

Amyloid, or waxy degeneration, is associated with a cachectic appearance; with an increased flow of urine, which, later in the disease, becomes albuminous, and contains tubecasts generally hyaline. Urine diminishes towards the end of the case, and dropsy then gradually supervenes. There is frequent diarrhœa, hepatic and splenic enlargement. The patient dies either from exhaustion or from uræmic poisoning.

As an appendix to the paper read before the Society, I shall give a brief outline of several other cases of the same disease which have come under my notice.

Case V.—Eliza Hume, æt. 42, washerwoman, admitted to Ward XI., March 15, 1860.

Has long indulged freely in intoxicating drinks. Has observed for some time past that she made more water than natural. Is subject to occasional œdema of the feet and ankles. Has been under observation ever since. Passes from 70 to 120 oz. of urine daily; specific gravity about 1007; very albuminous, containing hyaline tubecasts. She is at times subject to very severe diarrhœa; stools occasionally bloody. There is lesion of the aortic and mitral valves. Liver and spleen not enlarged.

Case VI.—William Gillespie, æt. 41, admitted to Paton's Ward, July 21, 1860. Has been recently troubled with difficulty of breathing, especially at night. On account of this he applied for admission to the Infirmary. He had some degree of bronchitis. Liver measured 6 inches in the mammillary line. Urine varied from 90 to 100 oz. daily; pale, specific gravity 1008, highly albuminous, with hyaline and some granular and fatty casts. No dropsy. He continued under treatment for some time, and was dismissed relieved.

Case VII.—Grace Tait, æt. 32, housemaid, admitted to Dr Keiller's[1] Ward, July 3, 1860. Was at one time a pretty hard drinker, but has lately been temperate. Nine weeks before admission, she noticed that she was passing large quantities of urine. Had frequently to rise at night to make water. Some weeks later, slight dropsy appeared in her feet, and gradually increased, the urine diminishing correspondingly.

On admission, there was general anasarca. Urine about 20 oz. daily; pale, specific gravity 1008, with abundant albumen, and hyaline tubecasts. The liver was enlarged. Signs of tuberculosis in both lungs. Powerful diuretics were administered, under which the amount of urine increased to 100 oz. daily, and the dropsy diminished. Soon again, however, the amount of urine fell, the dropsy increased, and she became drowsy and almost comatose. She died in the end of August.

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[1] I would here beg to acknowledge my obligation to Drs Keiller and Warburton Begbie, who have allowed me to make use of their cases; and to their former assistants, Drs Sclanders and Argyll Robertson, who favoured me with notes of these cases.—T. G. S.

I examined the kidneys, and found the malpighian bodies and smaller arteries in a state of amyloid degeneration, and the epithelium lining the tubules to a great extent fattily degenerated. The kidneys were somewhat smaller than natural.

Case VIII.— —— M'Kenna, a labourer, æt. 50, admitted to Dr Warburton Begbie's Ward, April 27, 1860. Stated that he had enjoyed good health till within the last year. For some time had been making much more water than usual; but, for ten days prior to admission, the quantity had greatly diminished, and dropsy had come on.

On admission, there was great ascites. The daily amount of urine was about 16 oz., and soon became even less. He gradually sunk, and died about a week after admission.

On examination, the kidneys were found in a state of waxy or amyloid degeneration.

Case IX.—John Fraser, typefounder, æt. 22, admitted to Paton's Ward, February 10, 1860. He was suffering under phthisis, and had improved considerably under treatment. On July 13 I found that his urine had become albuminous. On measuring, I found that it ranged in amount between 60 and 80 oz. daily; specific gravity about 1014. After remaining some time under treatment, he was dismissed, the albuminuria still continuing.

Case X.—John Russell, æt. 18, admitted to Paton's Ward, February 25, 1860. He was under treatment for phthisis, and had been getting gradually worse. In the middle of July I observed that his feet were œdematous. I then found his urine very albuminous, of specific gravity 1010 to 1015, ranging in amount from 54 to 70 oz. daily. The liver measures 6 inches in a line with the sternum, and somewhat less in a line with the nipple. The dropsy increased, and in the end of August the patient died. No *post-mortem* examination was permitted.

Case XI.—Mary Johnston, æt. 45, wife of a traveller, admitted to Ward XI., May 30, 1860.

For seventeen years she has been subject to chronic rheumatism. Six weeks before admission, she had considerable thirst, and made more water than usual. Shortly before admission, her urine diminished, and became loaded with deposit; and, at the same time, considerable dropsy appeared in her feet, legs, and abdomen. On admission, she was pale and anæmic. Her liver measured 7 inches in the line of the right nipple. She had considerable lumbar pain, especially on the right side. Urine distinctly albuminous, and contained a few hyaline tubecasts. She was ordered small doses of

Tincture of the Muriate of Iron. The amount of urine rapidly increased; the dropsy diminished. The urine ranged from 90 to 123 oz. in the 24 hours. She was soon able to leave the hospital, free from all dropsy, the urine continuing as before.

Case XII.—Bernard M'Quaid, æt. 44, French polisher, admitted to Paton's Ward in the end of January 1860.

Sixteen years ago, had syphilis, followed by periostitis and various skin eruptions. Two years before admission, he observed that he was passing more water than usual; and that, after a hard day's work, his ankles became swollen. Had within the last few months suffered much from bronchitis and asthma.

On admission, he looked cachectic. He was greatly troubled with bronchitis and asthma. No dropsy. Urine varied from 40 to 80 oz. daily; specific gravity 1011 to 1015, albuminous, and contained hyaline and granular tubecasts. Left lobe of the liver enlarged. He continued under observation for several months, at the end of which time he was dismissed, though urinary symptoms remaining as at first.

Case XIII.—James Murray, æt. 32, brushmaker, admitted to Paton's Ward, June 29, 1860.

Thirteen years ago he contracted syphilis, and has suffered from rheumatic pains in the joints and bones ever since. During the six weeks prior to admission he observed that he made water more frequently than usual, but does not know whether it was in increased quantity or not. A few days before admission, his feet and scrotum became œdematous; but, on his taking a diuretic, these symptoms rapidly disappeared. On the first day in the Infirmary he passed 30 oz., pale straw-coloured, highly albuminous, containing granular tubecasts. He was ordered a slightly diuretic mixture. His urine increased, and ranged, during his stay in the hospital, from 60 to upwards of 80 oz.; the specific gravity about 1015; tubecasts hyaline, and containing here and there a fatty cell. The pale, cachectic appearance was well marked in this patient. He was dismissed relieved in the middle of August.

Case XIV.—Helen Anderson, æt. 27, admitted to Ward XI. in July 1860.

Stated that for eleven years she has suffered from constitutional syphilis. Her face is pale and cachectic-looking; her forehead scarred with the cicatrix of an old syphilitic ulceration. Throat ulcerated. Two months ago, had a miscarriage, and afterwards observed dropsy of the legs and abdomen.

On admission, the dropsy was very considerable, and the urine about 20 oz. daily, of specific gravity 1017, highly albuminous, containing granular tubecasts. She had rather severe diarrhœa. Ordered small doses of Iodide of Potassium, along with complete rest, to which she had not been accustomed; and notwithstanding the diarrhœa, which was very persistent, the urine increased to 40, 50, and 80 oz. daily. The dropsy at the same time diminished. The urine was then of low specific gravity 1006, albuminous, and containing a few hyaline casts. She continued under treatment for some time, and was dismissed free from dropsy, but the urinary symptoms as before.

CASE XV.—Janet Gilmour, æt. 34, servant, admitted to Dr Keiller's Ward, January 3, 1861.

Some years ago she contracted syphilis, and has since had pains in the bones, skin eruptions, sore throat, etc. Last July, had erysipelas, and afterwards dysentery. On her recovery she observed that she was making more water than usual; that she had occasion to rise frequently during the night, and made a good deal each time. In the beginning of August dropsy gradually commenced, and has increased since.

On admission, Dr Scott informs me, she looked pale and cachectic. Dropsy very considerable. Amount of urine, she thinks, not half of what it was in the end of July; it is albuminous, containing hyaline casts. Her bowels are very loose. Hepatic dulness cannot be determined.

*January* 17.—Within the last few days she has been drowsy, but to-day is somewhat better.

She still continues under treatment.

To these cases, which have come under my own observation, I may add a few which I find recorded by previous observers:—

CASE XVI.—Frederick Woodman,[1] æt. 15, came under Dr Budd's care in King's College Hospital in June 1850.

He had long had morbus coxarius, and was weak and emaciated. His belly distended from enlargement of the liver and spleen. He was subject to occasional attacks of diarrhœa, notwithstanding which his urine was, on an average, about 48 oz. daily, specific gravity 1008 to 1013, containing a few large waxy and granular casts. In December the urine diminished in amount from 54 to 12 oz.; and in the end of that month the patient died exhausted.

On examination, the liver, kidneys, and spleen were found in a state of waxy degeneration. The intestines presented no lesion to account for the diarrhœa.

CASE XVII.—Dr Wilks[2] records the following case: A woman, aged 30, suffered from phthisis, which began, after exposure to cold, four months before her death. "At first, a large quantity of urine was passed, which was albuminous. Soon the urinary secretions diminished, and at the same time diarrhœa and vomiting set in. The urine never increased in quantity, and the symptoms continued, the vomiting being quite uncontrollable. No dropsy was present."

On *post-mortem* examination, her kidneys were found waxy.

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[1] *Dr Johnson on Diseases of the Kidney*, p. 333; and *Dr Budd on Diseases of the Liver*, p. 311.

[2] *Guy's Hospital Reports.* Second Series, vol. viii., p. 261.

CASE XVIII.[1]—Sarah Wilson, æt. 7, admitted to Royal Infirmary, Edinburgh, November 11, 1853.

"Three years ago she suffered from scarlatina, and has ever since been a weakly child, with a capricious appetite. In the beginning of last summer, œdema of feet and legs was first observed, together with diarrhœa, which has continued, more or less, ever since."

On admission, the urine was of a pale colour, specific gravity 1006, very albuminous.

On November 25 it was noticed, "Urine passed in great quantity, specific gravity 1002, not so coagulable." Diarrhœa severe, and almost constant. The dropsy increased, and she became very drowsy, and died on December 13.

On *post-mortem* examination, the liver, kidneys, and spleen were found very distinctly waxy; and the lower third of the small intestine was ulcerated.

CASE XIX.[2]—William Sibbald, a clerk, æt. 31, admitted to the Royal Infirmary, September 7, 1852.

For some years past has not enjoyed good health.

On admission, there was evident signs of phthisis at the apex of the right lung. "Urine normal; but he has frequent calls to micturition, obliging him to rise frequently during the night."

*December* 16.—"Disease steadily advancing. Bowels rather loose. Urine of specific gravity 1012, of a dark amber colour, slightly albuminous."

*January* 1, 1853.—"Micturition frequent. Urine strongly coagulable by heat and nitric acid. Œdema of feet and legs, with puffiness of the face."

*January* 20.—"Is getting gradually weaker and more emaciated. No pain in the loins; but micturition is frequent. Urine of a dark amber colour, specific gravity 1012, very albuminous."

On January 26 the patient died.

On *post-mortem* examination, the lungs were found thoroughly disorganized. Liver and spleen distinctly waxy. "Kidneys also very firm and dense, with partial atrophy of the cortical substance, presenting a slight degree of the waxy degeneration."

CASE XX.[3]—Thomas Kegan, æt. 40, admitted December 13, 1858.

"Patient was in good health till last May, when he experienced intense thirst, and began to drink large quantities of water. His urine became greatly increased in quantity; he required to get up three or four times in the course of the night to micturate."

On admission, he had distinct signs of phthisis. No œdema. Skin dry. "Urine acid, unusually transparent, specific gravity 1010, considerable quantity of albumen, chlorides abundant, no sugar." He passed at first 176 oz. of urine in 24 hours, but it rapidly diminished in quantity. Dec. 22d, 64 oz.; 25th, 54 oz.; 26th, 48 oz. He died on the 27th.

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[1] *Bennett's Principles and Practice of Medicine.* Third Edition, p. 799.

[2] *Ibid.*, p. 801.

[3] *Ibid.*, p. 974.

On *post-mortem* examination, the lungs were found very tuberculous. The liver, spleen, and kidneys were much enlarged, and afforded excellent examples of waxy degeneration.

I have thus given a brief account of 20 cases of Bright's disease, from my own notes and from the works of previous authors. In all of them there was a greater or less increase in the daily amount of urine, and a striking general correspondence in the other symptoms. In 9 of them the nature of the lesion was ascertained, by *post-mortem* examination, to be waxy or amyloid degeneration; and in the other 11, both from the similarity of the symptoms and from other considerations, I think that we are warranted in believing the same degeneration to have existed. Their history is markedly different from that of the fatty kidney which Bright[1] figured in his first plate, and illustrated in his first case. Moreover, almost all of them were associated with long-continued wasting disease; and it has been long known that the form of renal affection accompanying phthisis, syphilis, and other wasting maladies, is the waxy or amyloid degeneration.

Of these 20 cases, 6 were associated with phthisis, 6 with syphilis, 2 with caries, 2 with intemperance, 1 with cancer, 1 with chronic rheumatism, and 2 with no particular disease.

Whether further observation may confirm the opinions founded upon these cases, we cannot say; but, in the meantime, they are laid before the profession, in the hope that they may lead to further investigation.

# Part Second.

## REVIEWS.

*Infant Feeding and its Influence on Life; or, the Causes and Prevention of Infant Mortality.* By C. H. F. ROUTH, M.D., M.R.C.P.E., M.R.C.S., Physician to the Samaritan Free Hospital for Women and Children, etc. 12mo. 1860. London.

THE subject of early infantile mortality, considering its enormous rates and the present imperfect state of our knowledge of its laws, involves many points of much interest and great importance. Whether we regard such a topic in its relation to individuals or to a community generally, whether we regard it with reference to the causes from which it springs or the consequences it entails, it must be admitted that there is scarcely, if at all, a question in political economy demanding more attention; while, if we limit our inquiries to its medico-legal, or even its medical aspects alone, it must also be admitted that there are few questions of greater magnitude, few subjects so familiarly spoken of, and, at the same time, so little inquired into or understood by the ordinary run of practitioners. The fact that, during the earlier months of life, great mortality prevails, is, no doubt, well known; and, so far as such a general statement is concerned, the fact is well founded and useful in its application. But, if we enter on particulars, very little positive, or at all generally applicable, information is found to exist. What the proportionate amount, or progressive increase or decrease, of mortality is during the earlier *days* of life, or even *hours* considering the new circumstances in which a child is then suddenly placed, is a matter deserving of further research. What the particular *causes* of death are at this period; why it is that infant mortality is so excessive; and whether, or how far, such a rate of mortality is unavoidable,—seem questions no less demanding investigation; and yet we are utterly destitute of anything like certainty or precision on the matter.

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[1] See Bright's *Medical Cases*, vol. i.

There is no reason to complain of any deficiency in the amount of isolated and discursive statistics existing on this subject. Unfortunately, however, there is little connection, little unity of purpose, to be found among the productions of those who have applied themselves to such topics. We have special statistics of limited application—such as those furnished by foundling hospitals, lying-in hospitals, workhouses, and the like; but these afford very imperfect data for drawing such comprehensive and universally applicable conclusions as we have indicated. We have some tables, giving the proportionate number of deaths during certain early ages, compared with the absolute number of deaths at all ages. We have tables of the absolute number of births and number of deaths at certain early, as well as progressively advancing periods of life, for each month of the year. We have tables bearing out certain hypotheses connected with such matters. But there is something more than even all this required. The first year of life is a compendium of minute and intricate problems,—found, however, of universal occurrence, and apart from all local circumstances; and as in microscopic examinations, the smaller the object the finer must be the adjustment of the instrument, so we might advantageously have special mortality tables—some means of information more specially provided, and of more exact and precise adaptation to the circumstances of this more minute inquiry. Of those born, and of the proportionate numbers dying even at the 1st, 2d, 3d, 4th, 5th, 6th, and 7th days—at a fortnight, three weeks, and a month old—statistics, fallible as these are, would still be interesting and valuable, and might be found serviceable, no less in a legal than in a medical point of view.

Dr Routh on this subject has accumulated a considerable amount of information, derived from various sources. After quoting M.

Quetelet's calculation, that rather less than a quarter of the children born, die in the first year following birth, he goes on to speak of the mortality occurring in the different months of that period. Here some difficulty is met with, arising from the disparity existing between the different statistical tables adduced. For the first month of life—of all the months in the first year the most fatal—M. Quetelet's researches show the mortality to be in the proportion of 1034 deaths in the first month to 3538 for the whole year, or 29·2 per cent. In Paris, for 1823 (*Annuaire du Bureau de Longitudes*, 1826), the proportion is 693 to 1764, or 59·2 per cent. Dr Routh then quotes a very complete table, showing the mortality in Ireland from one month to ten years, in both rural and civic districts, for 1850–51. But a very important distinction must be made in comparing this table with those just mentioned, inasmuch as the deaths for the first month in those were compared with the deaths for the whole year, and the percentage of each month's deaths so struck in relation to the mortality of the first year. In the Irish table, however, the mortality is calculated in proportion to the numbers alive at the age specified, and the percentage of deaths struck in relation to the numbers of the population alive of that age. In this table, then, the mortality for the first month of life in Ireland reaches, in Connaught, the rate of 38·8 per cent.; that is, to a population in the civic districts there, of 265 individuals of one month old, there were recorded 103 deaths at the same age—making a mortality of 38·8 per cent., as stated above. Here another difficulty is found to present itself, since, for the Irish lying-in hospitals, according to the summary given for the ten years 1831–41, the mortality is brought out at 6·1 per cent., and from the other similar tables, such as those of Madame Lachapelle, Drs Ramsbotham, Hardy, Arneth, etc., a similar percentage is deduced; while the table for Ireland gives a mortality at least five, and sometimes six times as great. Again, taking England and Wales on the same scale, it is shown that, all deaths at all ages being represented by 100, 6·4 deaths take place under one month, and 21·8 under one year; *i.e.*, out of 28·2 deaths, 6·4 are deaths of children under one month, or 27 per cent. In all Ireland, reckoning all deaths as 100 at all ages, 4·3 die at one month, 13·6 under one year; *i.e.*, out of 17·9 deaths, 4·3, or 24 per cent., are deaths under one month.[1]

This is, at the smallest, a large mortality. We have said that the subject seems interesting medico-legally; and the fact is borne out by such statistics, especially when the probability is that they are, in a great part, the statistics of crime. Mr Wakely, the coroner for Middlesex, is quoted by Dr Routh as stating that, for that district alone, 300 children annually are known to be the victims of infanticide; and Mr Acton, in a table showing the mortality under one year in England and Wales for 1856, adduces no less than 846 infants officially recorded as having been the victims of violent deaths. Such are the data upon which Dr Routh frames a few very interesting chapters at the commencement of his little work; and such data are those we say there is some want of in medical literature. The rate of mortality exhibited in the tables quoted is happily, however, much less startling than was the case not very many years ago, and which, in some localities, may still prevail. In the Dublin Lying-in Hospital, for the first 25 years of its existence, 1 in 6 children died: this, of course, would be within the first month. Maclean, in his visit to St Kilda in 1838, found that there 8 out of 10 children died between the 8th and 12th day of life; and in the London workhouses about a century ago, 23 out of 24 children died before the age of 12 months. These are frightful rates of mortality, and, high as our present rates may be, we can congratulate ourselves on the fact, that they are comparatively small and progressively diminishing.

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[1] In an interesting paper on this subject, Dr W. T. Gairdner lately pointed out the proportion of deaths for the first year of life as varying from 4 to 14 per cent. even in healthy districts. The deaths under one month, however, are not given.—*Edinburgh Medical Journal*, November 1860.

Where every page contains some one or other important lesson, it becomes difficult, if it were desirable, to epitomise, in the form of a review, such a book as this. Fortunately, however, no speculative or conjectural theory is here advanced regarding infant management; but, on the contrary, a simple conformity with the dictates of nature is urged, and supported by numerous examples and well-assorted statistical tables, as indispensable for the health or safety at once of mother and child. In all the mammalia, as the very term itself implies, there is provided a certain form of aliment suited for the first period of existence, and rich in those materials essential for infantile well-being and development—materials which are nowhere else to be found in similar combination, or so perfectly adapted towards the end in view. Therefore, in all cases, if at all possible, an infant ought to be reared exclusively on such aliment—namely, breast-milk. Where the mother, however, cannot supply either the quantity or quality fit for the child's nourishment, a certain allowance of artificial food, carefully selected and accurately proportioned, may be employed for supplementing the deficiency; and, where circumstances may render it altogether impossible for the mother to nurse the child at all, then in such a case another nurse, who shall rear it at the breast, is to be at once procured—exclusively artificial feeding being held as a last resource. There are thus discussed by Dr Routh the three different modes of infant feeding—viz., by the mother, by a nurse, and by artificial food. The selection and preparation of artificial food, where this has to be resorted to, require a knowledge of those principles of alimentation in infancy which are as important as they seem remarkable. We can scarcely here enter upon those physiological details which the consideration of such a subject as that of assimilation during early infancy would involve. We can only remark, that in breast-milk are found those peculiar organic and inorganic materials absolutely essential for adequately meeting and subserving the rapid changes, and as yet imperfect powers, of infant life; and whatever form of artificial food be adopted, none has been found, as a general rule, to maintain a state of health unless its elements correspond with those of the breast-milk upon which the child ought naturally to have been supported. The saline ingredients of milk—the phosphates of lime and soda, carbonate of lime, phosphoric acid, and the seemingly indispensable chloride of potassium—must be no more overlooked than the combustible and nitrogenous elements found in this compound. Keeping such facts in view, artificial feeding may be made to suit most of the requirements of early life, where nurses cannot be procured, as in foundling hospitals, etc.; and if in all cases it were practicable to supersede their employment, there seems every probability that a certain step would be gained towards the suppression of crime, as there is little doubt that the hiring of wet-nurses may, to some extent, become an incentive to infanticide, whether by violence or neglect.

Where the mother cannot suckle her child, the employment of a wet-nurse may in many cases become unavoidable; but, in selecting one, more caution might be exercised than is usually observed. Most wet-nurses are fallen women, and this very fact inculcates watchfulness. Whatever scrutiny may be exercised in such instances, delicacy often forbids the only investigation which would really be satisfactory or decisive. In a moral point of view, their character, in other respects besides that of mere chastity, admits of some misgivings; the integrity and trustworthiness for such an office, and even the influence upon a household, are in such cases matters that require some consideration. And, irrespective of former habits altogether, a curious question might seem calling for inquiry, —viz., whether, through the milk of a wet-nurse, mental peculiarities of a good or bad kind might not, as well as bodily diseases, be transmitted to a child.

Considering the excitement prevailing of late in reference to what has been entitled the "social" evil, allusion to the questionable fitness of fallen women for wet-nurses comes not unseasonably. Among these fallen there are, however, several grades, and considerable variety in the degree and nature of their offence; so that, while admitting the expedience of those precautions urged by Dr Routh, we must remember that it is among the literally *unfortunate* rather than the *guilty*, among the newly-fallen rather than among the long-degraded and more profligate of such a class, that wet-nurses are occasionally found;—consequently those suspicions, which might justly be entertained were it otherwise, become in this way considerably less pertinent. Indeed, the circumstances of the case renders it almost impossible, with ordinary care, that a common prostitute should obtain a situation as wet-nurse. The probability even of disease itself would here form only an incidental obstacle, in comparison with the universally loathsome and irradicable veto existing in the morally degraded position of the individual. But there is another sense in which the hiring fallen women as wet-nurses may be viewed; since, where speciously no such habit and repute infamy attaches to the character—where, considering all known circumstances, we might incline to pity rather than condemn—where apparently the victim of deception and design seems more sinned against than sinning,—there, in many cases, we might find that if the guilt of prostitution has not been reached, a different and far deeper amount of crime has been incurred—namely, that of child-murder. Infanticide is too often the refuge of unchastity; and, where it can be made the stepping-stone at once to relief from the burden of an illegitimate offspring and to obtaining a respectable livelihood, we may find it making the wages of the wet-nurse little else than the price of blood. That such a result is not unfrequent, the statistics already given afford strongly presumptive evidence; and we cannot but agree with the author under consideration, that by encouraging the employment of fallen women as wet-nurses, not only may we be encouraging vice, but, if not offering an incentive to murder, at least "*authorizing the death of the nurse's child.*" This might lead us to the consideration of the question, whether the crime of child-murder might not, by any other means also within our power, be diminished—whether, by the establishment of open foundling hospitals, the *desertion* of children might not be substituted for their deliberate *destruction.* If so, it seems a narrow-minded mode of viewing these matters, when the result is to oppose such a substitution of *child-desertion* for *child-murder*, on the ground that so acting would look like doing evil that good might come. On this question, however, we cannot now enlarge: a more fitting occasion may occur for referring to this most important, much disputed subject.

The concluding part of this volume is devoted to defective assimilation and its treatment. Indeed, this, and the chapters devoted to the principles of infant feeding, constitute the main part and the main object of the work. As a compendium of valuable information on all these subjects, we can scarcely speak of it in too high terms. Without any pretensions to being a standard work in medicine, it can claim the merit of rendering more accessible and more readable to the generality of practitioners numerous most important facts, otherwise only to be found scattered among the various and sometimes voluminous writings of separate authors; while it is by no means wanting in original thought and in sound conclusions, drawn from the stores of information evidently possessed by the author,—and what is more, while much of a highly philosophical and scientific tendency is to be found in its pages, they are at the same time replete with instruction of the most practically applicable kind.

*Anatomy of the Arteries of the Human Body, Descriptive and Surgical; with the Descriptive Anatomy of the Heart.* By J. H. Power, M.D.; with Illustrations by B. W. Richardson, F.R.C.S.I. Dublin, 1860.

The Author, in his preface, states, that the object of his book is to afford to the student engaged in the acquisition of a knowledge of practical anatomy, such assistance as may be useful to him not only at that time, but long after his studies have been completed.

There is no part of the anatomy of the human body which possesses so much interest to the practitioner of medicine as that of the arterial system; and, consequently, there is no part to which the attention of the student ought more carefully to be directed during the time spent by him in the dissecting-room,—an exact knowledge of the position and relations of the chief vascular trunks being absolutely essential to the proper comprehension of the diseases to which they are liable, and to the safe treatment of the injuries to which they are exposed.

Any carefully written account of the anatomy of the arteries, of the various operations to be performed on them, and of the precautions to be taken in their performance, must thus prove of great service both to student and practitioner. We have looked through this book of Dr Power's, and we find in it many points worthy of commendation. The descriptions appear to be carefully and clearly written; and the engravings also, so far as their size permits, are illustrative. A useful feature in the book is the account which the author has given of many of the recorded cases of operations upon the most rarely tied arteries, such as the subclavian, abdominal aorta and internal iliac.

We observe that Dr Power, in his chapter on the Heart, has adopted the complex and confusing description of Searle respecting the arrangement of the muscular fibres of that organ. He does not appear to have been acquainted with the recent elaborate investigations of Mr James Pettigrew, which formed the subject of the Croonian Lecture before the Royal Society of London last year, and which have tended greatly to simplify our conceptions of the arrangement.

In his account of the anatomy of the descending thoracic aorta, the author has omitted to particularise the effects produced upon the adjacent parts by aneurismal disease of that vessel—an omission which ought certainly not to have occurred in a practical work of this description, especially when we consider the important symptoms produced by the pressure exercised by the growing aneurism. We notice also occasional deficiencies in the description of the ultimate arrangement of the arteries in several of the viscera; but this is comparatively unimportant in a work, the main object of which is to serve as a guide to the student in the dissecting-room.

We can recommend this book to those who may wish to consult a systematic work on the surgical anatomy of the arteries.

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*Practical Treatise on Fractures and Dislocations.* By FRANK HASTINGS HAMILTON, M.D., Professor of Surgery, Buffalo, U.S., etc., etc. Illustrated with 289 Woodcuts. Philadelphia: Blanchard and Lea. 1860.

AMONG the many good workers at surgery of whom America may now boast, not the least is Frank Hastings Hamilton; and the volume before us is (we say it with a pang of wounded patriotism) the best and handiest book on the subject in the English language. It is in vain to attempt a review of it; nearly as vain to seek for any sins either of commission or omission. Why, he gives no less than seven illustrations of splints for that fracture of the radius commonly called after the late Mr Colles of Dublin; besides figuring another, with a curve to its ulnar side, which he generally adopts in his own practice, although he has treated many cases successfully on straight splints. Thus he treats each fracture *seriatim*, fully and clearly.

Concerning the much disputed question, whether fractures of the neck of the femur, within the capsular ligament, ever reunite by bone, he has much to say, much erudite quotation, and many specimens for reference. One which he figures, removed from the body of Mrs Wakelee by Dr Wakelee, four years after the fracture had occurred and been treated *as* fracture within the capsule by Dr Bissell, shows a white line leading across the neck, and considerable shortening of the latter. Whilst Professor Hamilton confesses never to have seen a specimen which, upon a careful examination, proved satisfactory, and claims protection against the assaults and insinuations which have so frequently fallen upon those who ventured to doubt the authenticity of every specimen which was laid before them," he does not deny the possibility of a bony reunion.

The second part of this valuable work is devoted to dislocations, and the last chapter of all to "*congenital* dislocations." In this, as in most other works on surgery published in America, quotation is somewhat more prominent than among British authors; but in Professor Hamilton's pages, the various opinions he has collected are so judiciously arranged, and his comments upon them so independent and sagacious, that the most invidious critic could scarcely object to them.

We have seen no work on practical surgery which we would sooner recommend to our brother surgeons, especially those of "the services," or those whose practice lies in districts where a man has necessarily to rely on his own unaided resources. The practitioner will find in it directions for nearly every possible accident, easily found and comprehended, and much pleasant reading for him to muse over in the after consideration of his cases.

*Stricture of the Urethra; its Complications and Effects: A Practical Treatise on the Nature and Treatment of these Affections.* By ROBERT WADE, F.R.C.S., etc. etc. Fourth Edition (with Engravings), Enlarged. London, 1860.

A book which has passed through three editions is almost independent of the reviewer; but we think it only fair to call our readers' attention to one written with so much care and conscientiousness as this volume by Mr Wade.

The author, in his preface, modestly states, that "this treatise has no pretensions to microscopical or historical distinction," and that he has "restricted himself to really practical points." He certainly has done so, but by no means to the total exclusion of either of these; for in Chapter VI. he gives a clear and full account of the anatomy of the urethra; and in Chapter XI., treating of the external division of strictures, there is much interesting historical reference.

Chapter XII. contains large extracts from Professor Simpson's valuable lectures on surgical fever,—a subject which is only now finding its proper space in the books; and it is characteristic of the plain, honest style of Mr Wade's book, that he gives Professor Simpson's words openly as quotations, and does not, by the more common method of "picking and packing," insert them as his own, with a conscience-stricken reference in small print at the chapter's end to the real author.

Mr Wade's name is generally associated with the treatment of stricture by potassa fusa. He is, however, too good a practitioner to follow blindly any routine treatment; and he complains, naturally enough, of his views on the subject having been misunderstood or misrepresented, or both; and "that, in a late work on stricture, in which the author professes to give a summary of the opinions of different writers on that disease, it is stated that I regard the P. F. as a remedy for all cases of stricture except the mildest; which assertion is so *very far from the truth,* so completely unsupported by any observations contained in my work on stricture, that I am quite at a loss to comprehend the grounds on which it could have been made. *It is well known* that I have recourse to that remedy only in the *more intractable* cases of that disease, and then not until I had fairly tried the effects of simple dilatation, unless that process had previously failed in good hands."

But he believes firmly in the general efficacy and safety of the caustic, and "could not conscientiously resort to perineal section, until the potash had failed after a proper trial, unless the case was one in which the caustic was evidently inadmissible."

The subject of Mr Wade's book has been so frequently discussed in this Journal, that we refrain from entering further into it. And without committing ourselves any more than Mr Wade does to one method of treatment, we recommend "his Strictures" to the careful perusal of our readers, most of whom would find them a valuable addition to their professional bookshelves, as a full and learned treatise on one of the most important diseases a surgeon is called upon to treat.

*A Treatise on Medical Electricity, Theoretical and Practical, and its Use in the Treatment of Paralysis, Neuralgia, and other Diseases.* By J. ALTHAUS, M.D. London: Trübner & Co. 1859. 8vo.

*On the Curative Treatment of Paralysis and Neuralgia, and other Affections of the Nervous System, with the aid of Galvanism.* By HENRY W. LOBB, L.S.A., M.R.C.S. Illustrated with several Wood Engravings. Second Edition. London: H. Bailliere. 1852. 12mo.

It may appear somewhat paradoxical to speak of an intangible material, yet we can scarcely define electricity in any better terms. Its transformations, its excitation, its rapidity of transmission, its all-pervading presence—as these are appreciable through the phenomena—the sensible results produced by its unseen agency; on the other hand, its existence in a substantive form, seeming in some circumstances plainly perceptible to the senses; and, again, the various shapes assumed by it in its intimate relations to, if not identity with, apparently different imponderables, as light, heat, and nervous force,—all impart to it a sort of pseudo-palpable nature, a kind of intangible materiality, and, what is more, seem necessarily to have involved much that is hypothetical, much that is merely conjectural, in its imputed characters. With the advances of science, however, we are every day approaching nearer and nearer a simplification of what thus seems complex in the nature of this agent in its more comprehensive and general signification, and to a clearer understanding of its operations and its laws; while, since Swammerdam, in 1678, found muscle contracting under the influence of copper and silver, down to our own time, the subject of *Animal* electricity has been progressively advancing. From that time to this, by certain well-authenticated landmarks, we can trace its progress and we can see that each step has placed us in a position more hopeful for obtaining an acquaintance with it in this mysterious condition, and, apparently, for the practical application of such acquaintance, like that regarding electricity in general, towards many invaluably useful and important purposes.

Animal electricity presents itself under several different aspects. During life, a continuous alteration of equilibrium goes on in what are assumed to be the molecules of the animal body; and with each such alteration a certain amount of electric force is found to be evolved. This has been admitted as evidence of electricity existing in some form within, and essential to, animal bodies, experiment having shown that these electric currents are connected with the life of the animal, as they cease to be appreciable after death. Certain indications, again, of electric force may be found persisting in animal bodies after death; but these must be carefully distinguished from those only co-existing with vitality. So far as these former are known to influence, and to be produced in animal bodies, according to some unknown disposition of materials, the experiments of Galvani in 1780, of Volta, Humboldt, Valli, and other inquirers, long ago pointed out; and in a more exact and distinct manner, the same subject, especially in reference to the existence of muscular currents and to the effects of electric currents on nerves, has been more lately investigated by Matteucci, and its laws still more precisely determined by Du Bois Reymond, Eckhard, etc., the great improvements and numerous innovations introduced among philosophical instruments to a great extent aiding the investigations of modern observers, and their confirmation of what has been done by their predecessors.

Founding on the knowledge thus abroad regarding its relations to various vital phenomena, electricity has been applied to a large extent as a therapeutic agent. Here, however, as in all other remedial departments of medicine, much error has crept in, much that is empirical, much that is deceptive. Whatever our acquaintance with animal electricity may be, we can scarcely shut our eyes to a great part of such knowledge regarding it being hypothetical. Considerable obscurity hangs over questions of the last determinative importance regarding its office and its attributes, and much want of confirmation attaches to its assigned *régime*. We are, as it were, only in the middle, if even at so advanced a stage, of an induction, by which we are slowly arriving at some definite conclusion on the matter; and, consequently, we find the subject in the meantime presenting an opportunity for mere assumption and a show of reason, of which quackery has been by no means slow to take advantage. The names of those who have investigated and borne testimony to its therapeutic value in certain cases—Duchenne, Remak, Becquérel, the authors under notice, and many others—would render it worse than absurd to deny its possession of such powers. But, on the other hand, there is a certain class of practitioners in whose hands it has been abused, and where its pretended cures and pretended virtues have been neither more nor less than the offspring of imposture and credulity. Its sham depurative powers, its sham and exaggerated achievements as an anæsthetic, etc., etc., are now either exploded or found slinking in localities of which legitimate medicine takes no cognisance. Indeed, in this, and in all other such instances, the true and enduring may be separated and distinguished at once from the false and perishable by the very language in which the extent of their powers is described. The clear and positive terms in which the nature, extent, and grounds of the result asserted are set forth—the evident and satisfactory sequence of cause and effect—become at once apparent when the bare facts, the simple truths of the case, are honestly stated; wherever, on the other hand, in matters of the kind, a laboured and panegyrical defence of the subject is attempted, sophistry and chicanery are liable, and ought, to be suspected.

To those desirous of becoming acquainted with the later views of animal electricity, we can recommend a perusal of either of the works before us. The cases recorded of remedial treatment by electric agency are numerous and interesting, although in some the precise connection between the *rationalé* of its therapeutic action, and what has been ascertained regarding the fact of electro-physiology, so far as these have been at all satisfactorily demonstrated, it is occasionally difficult to see. Mere symptoms, again, appear to be often combated, while the seat of the disease, or the disease itself, seems entirely overlooked. We cannot call such mere alleviation of symptoms a cure of the disease they indicate. And in other cases still, there is a degree of difficulty in deciding whether the good effects attributed to electric influence may not equally well be ascribed to other modes of treatment adopted as accessory to this. In one case narrated (p. 102 of *Lobb on Curative Electricity*), we find obstinate constipation ostensibly yielding to the use of a pulvermacher chain. But here, in addition, we find the following statement:—"Diet plain and nutritious; brown bread and porter; daily regular exercise and cold bathing,"—the pulvermacher chain being thus, to say the least of it, nobly seconded as an aperient. We say, then, that its various applications described in these works are interesting and important, especially those given by Dr Althaus; but, at the same time, that some of them, so far as the curative powers of electricity goes, are open to doubt, while in others the selective powers of this agent in ferreting out the exact seat of disturbance seem still more questionable, were it not for the authority on which they are recorded, and the minute details given. It might, by the way, be a question, however, whether the effects of this agency would be as successful among patients of the middle and lower classes as it seems to have been among those of the elevated positions in society constituting the "*clientelle*" of Mr Lobb.

The work of Dr Althaus is one which at once conveys the impression of having emanated from a high authority, and one intimately acquainted with all that has been done in this department of science. Taking a calmly retrospective view of what has really been achieved by the influence of electricity as a therapeutic agent, he commits himself to no rash or speculative doctrines, but to such as are consistent with our knowledge of its exact physiological effects.

> "There are few remedies," says he, "employed in the treatment of disease on the value of which the professional mind is less settled than on that of galvanism. Enthusiastic panegyrists contended fifty years ago, and contend still, that it is a therapeutical agent superior to all hitherto discovered; whilst the great majority of the profession entertain serious doubts as to the reality

of the remarkable successes which are now and then recorded by medical galvanists. . . . . Electricity can only be expected to be of service in the treatment of disease if we are guided in its use by an exact knowledge of the physiological effects which it will invariably produce. I have, therefore, been most anxious to render the physiological part of my work as complete and comprehensive as possible.

"That there is at present so little certainty respecting the physiological and therapeutical effects of electricity, is in some measure due to the vast extent of the field that is to be explored, and to the comparatively short time that has elapsed since scientific researches of this kind have been undertaken; also to the intentional falsehoods that have been published, even in the present time, about pretended cures by means of electricity; and especially to the small number of observers who have devoted themselves to the study of these phenomena. We possess a large amount of valuable information and experience concerning the effects of internal remedies upon the system; we know where to procure and how to prepare most drugs; we know how to combine them, and in what cases and in what doses to administer them with advantage. But in respect to electricity we have no such certainty. What form of electricity should be used? in what cases should it be employed? shall we act indiscriminately upon the different tissues, skin, muscles, and nerves, or shall we limit the action of electricity to each one singly? It is easy to understand that we cannot expect beneficial results from the application of electricity if it is applied by empirical galvanists; if the cases are not well selected; if the apparatus employed does not possess those qualities which are necessary for medical use; if the dose of electricity given is too large or too small; and if, instead of acting upon the diseased part alone, the whole body, or part of the body, is acted upon. If, on the contrary, such mistakes as the above are avoided, electricity will be found a most valuable therapeutical agent, by means of which many morbid states of the system may be relieved, and even wholly cured."

In both works, however, much that will amply repay perusal is to be found, and to the general practitioner who has not yet made himself acquainted with the subject of which they treat, we can cordially recommend either,—the one (that of Mr Lobb) being the more popular, the other (that of Dr Althaus) being the more philosophical treatise on a matter as yet but imperfectly understood, although prospectively full of the most important results in the practice of medicine.

## *On the Signs and Diseases of Pregnancy.* By THOMAS HAWKES TANNER, M.D. London: H. Renshaw. 1860. 12mo.

THE author of this excellently got up, sensible-looking volume, is well known as a fertile producer of useful books, and is entitled to our esteem for so maturely compiling and so successfully bringing forth the fruits of his now somewhat numerous labours.

Dr Tanner has already conceived and given birth to a number of works, and the present well developed treatise—which, after careful examination, we can recommend as nearly containing, what the author in his preface states that he was determined it should do, "a concise but clear account of all that is at present known with regard to the signs and diseases of pregnancy"—is certainly one of his best productions.

This work consists of twelve chapters, each of which is infinitesimally, but not the less usefully, subdivided in a general table of contents, and which minute arrangement of the subject-matter of each chapter will be found to afford the reader a ready reference to any point he may at any time specially desire to study. We have reason to know that the usual copiousness of Dr Tanner's indices frequently serve to *grind* those of our *pseudo-students*, who are content to imbibe their knowledge from the most homœopathic sources, and who are not only individually satisfied with the least possible amount of reading, but foolhardy enough to subject themselves to the common risk of having their scanty and thus lazily borrowed plumes "plucked" when the real strength of their wings comes to be finally examined.

This preference for the *multum in parvo* of Tanner is perhaps, after all, not to be wondered at, when we consider that the manuals bearing his name are not only comparatively small and "easy to get up," but seem to exhibit traces not unlike as if they were intended by their author to serve as epitomized editions of certain well known, though considerably larger and much more expensive, text-books. The talent of properly "laying under contribution" the writings and experience of others is a peculiar gift, which is, however, always the more valuable when exercised by one who has himself enjoyed opportunities of becoming practically conversant with the subjects on which his literary efforts may be expended.

Dr Tanner most truly observes, that "knowledge derived from reading is of little value by itself." If this be the case in regard to the diagnosis of diseases in general, it is especially so in regard to the subject of the book he has now published; for to become skilful in forming a correct opinion as to the existence or non-existence of pregnancy, it is necessary to have had opportunities of interpreting the *book of nature* by frequent and careful observation of the indications of utero-gestation. Unlike the mere acquaintance with the writings of even the most experienced authors, which can only supply "obscure spectacles," personal interrogation of the functional and organic changes, as they are usually presented in the various periods of the pregnant state, can alone enable us, not only to set a proper value on the statements of patients, but also to weigh aright the testimony of those whose published opinions have not always been founded on this only sure basis of reliable knowledge.

It has too often been our lot to discover uterine bruits and fœtal kicks and "tic tacs" under the most violent asseverations of virgin protest, to leave us any confidence in disowning tactics on the part of *patients*, whose "bellies and not their words are to be believed;" but seeing that some *authors* have shut their understandings as well as their ears against the possibility of duly recognising and correctly interpreting the language which certain sounds most indubitably declare, we must beware of their special guidance, and rather appeal to Nature, and hear what she has to say on the subject.

The pertinacity with which some otherwise cultivated and experienced writers have continued to doubt the possibility of detecting the sounds of the fœtal heart by means of auscultation, affords a pregnant illustration that even learned men as well as foolish women may get themselves into trouble through a false conception.

It appears that the late Professor of Midwifery in our University spoke and acted as if the stethoscope was a useless piece of pretence, only "calculated to excite alarm in the patient," the "ceremony of applying it being very formidable to susceptible patients;" and as if there was no occasion whatever for here adopting "new modes of practice when experience had taught that the old ones were successful!"

We may, perhaps, in some measure excuse the dogged opposition to and dislike of change by those who, like Dr Hamilton, lived in a time when the special application of the genius of Lænnec was by no means generally had recourse to; but it is not easy to keep our patience with our countryman Dr Adams, who seems to continue to close his ears to the no uncertain sound produced by the application of auscultation to the obstetric art. Oh, "Paulus Ægineta," why did you not translate yourself to Edinburgh, even for an hour or two, before you committed yourself so positively on this subject? As sure as you are a Greek scholar and an able practitioner, we are certain that, if you really had "an ear to hear," it would have been so sensibly tickled by the numerous clinical evidences of maternity within our ready reach, that you would have returned to Banchory "excited by the novelty" and unwarped from "erroneous impressions and mistaken modes of thinking" regarding a question on which it would have been wiser to withhold an untutored authority.

We fear, however, that we must leave our excellent and esteemed friend to his own meditations, but trust that he yet will, with that authority which clinical experience can alone supply, not fail to criticise pretensions and expose shortcomings, which we have the reverse of pleasure in doing.

Our limited space forbids us at present from attempting to offer any special observations on the various interesting and important topics discussed by Dr Tanner, who has undoubtedly proved that his *horæ subsecivæ* have neither been "few nor far between," and whose individuality is most favourably exhibited in the work before us, which has our highest commendation.

*Medical Jurisprudence in Singapore: A Review of the Medical Evidence in a Recent Trial for Alleged Poisoning by Opium in that Settlement.* By J. H. ROBERTSON, M.D. Pp. 12. Edinburgh: Sutherland and Knox.

IN this pamphlet, Dr Robertson has performed his task temperately and well; and there can be but one opinion as to the soundness of his strictures on the medical evidence in this interesting trial. When we find a medical man, in his sworn deposition before the magistrate, affirming, "From the livid appearance of the body, the rapid decomposition which appeared to have taken place, and the peculiar fœtid odour that arose from the body, I am of opinion that death has been caused by opium, and that the opium was given in a liquid form; and, from being given in a liquid form, was all absorbed into the system;" and when, by the same medical witness, the head of the deceased was not opened, owing "to the advanced state of decomposition," and yet such positive statements given as to the cause of death, we are not surprised that the jury, during his cross-examination in the witness-box, brought the trial to a close by at once recording a verdict of not guilty.

An analysis of the stomach and contents is stated to have been made, but "no trace of poison could be discovered." The general evidence was as defective as the scientific, and the case was undoubtedly one which should never have been brought to trial.

And yet, four individuals were imprisoned and compelled to plead for their life on the strength of such rash opinions as those just given from the coroner's surgeon's testimony. Dr Robertson almost unnecessarily, as we think, quotes from Christison, Traill, and Taylor, to show how untenable that was; but we quite agree with him that, in every important criminal trial, two medical witnesses should be summoned to support the charge of the prosecution, so as to enable the jury to estimate aright the value of the scientific evidence; and that it is of great consequence, for the due administration of justice, that the medical men officially employed be well versed in medical jurisprudence.

# Part Third.

## PERISCOPE.

### MEDICINE.

#### ON PULMONARY APOPLEXY FROM CONGESTION. BY M. HOUSSARD.

At the meeting of the Academy of Medicine of Paris held on the 6th of November last, M. Houssard read a paper on Pulmonary Apoplexy from Congestion.

This variety of pulmonary apoplexy is not, said the author, the ordinary form of pulmonary apoplexy, described by various observers, in which the patients expectorate, more or less copiously, blood of a dark colour, the result of a true laceration of the pulmonary tissue, and which seldom is the immediate cause of death. This is a pulmonary apoplexy from congestion, without laceration of the pulmonary tissue, terminating speedily, either by death, or by resolution when the medical treatment has been sufficiently energetic.

This form of apoplexy, which is almost invariably connected with a lesion of the heart, makes its appearance rather suddenly, in general at night, during sleep, after a copious repast. It is recognised by the following symptoms:—Considerable oppression; uneasiness in the precordial region; heart's action rapid and strong; change in the appearance of the face, which is pale or slightly livid, and covered with cold sweat; expectoration frothy, white or slightly reddened; pulse frequent, small, sometimes imperceptible; respiration frequent, short, generally accompanied with a loud râle; on auscultation, subcrepitant and mucous râles pronounced.

This condition is very liable to relapse.

The means of treatment consist in general blood-letting, sinapisms, and stimulating foot-baths, the maintaining of the vertical position, followed by derivation from the intestinal canal.

M. Houssard, in the course of his paper, gave a summary report of several cases of congestive pulmonary apoplexy which he had observed.

*M. Devergie*, after the reading of M. Houssard's paper, reminded the Academy that in 1834, or in 1836, he had read a paper on sudden deaths, based upon forty-five *post-mortem* examinations, and tending to contradict the generally received opinion, that sudden death is due to cerebral apoplexy (called in France *foudroyante*), whilst the only form of cerebral hæmorrhage which can produce this result is hæmorrhage into the annular protuberance. Thirty-nine times out of forty-five the cause of sudden death was found to result from pulmonary congestion.—*Gazette Hebdomadaire*, 9th November 1860.

[We do not see anything particularly new in M. Houssard's observations. Most pathologists are agreed that pulmonary apoplexy is the result of extreme congestion of the lungs, generally connected with disease of the heart; that when rupture of vessels occurs, the hæmorrhage takes place into the air-cells; but that it may or may not be accompanied with a laceration of the pulmonary tissue.—Ed. *Edinburgh Med. Jour.*]

### DIURETICS IN BRIGHT'S DISEASE. BY PROFESSOR TROUSSEAU.

Professor Trousseau remarked lately, that he had only seen three patients recover from genuine Bright's disease,—one of them after the occurrence of well characterized epileptic attacks, the two others after being affected with persistent hemiplegia. At present, however, is to be seen, in the Ward St Agnes in the Hôtel Dieu, a man, admitted three months ago on account of chronic Bright's disease, who has been treated by M. Trousseau by means of diuretics, and whose urine for the last month has ceased to be albuminous. This patient has taken every morning a tablespoonful of the following diuretic wine:—Leaves of digitalis, in powder, 154 grains; squill, 77 grains; juniper berries, pounded, 770 grains; white wine, 24 ounces. This is to be macerated for three days, filtered, and an ounce of acetate of potash is to be added.

There is also under M. Trousseau's care a woman, who was admitted on account of ascites connected with albuminuria, and an affection of the heart. This woman was tapped twice, and was then ordered to take the above diuretic wine. She is now in good health.—*Journal de Médicine et de Chirurgie Pratiques*, December 1860.

### ON A LITTLE-KNOWN SIGN OF SCARLATINA. BY DR BOUCHUT.

For several years M. Bouchut has remarked in the eruption of scarlatina a curious phenomenon, which serves to distinguish this eruption from that of measles, erythema, erysipelas, etc.,—a phenomenon essentially vital, and which is connected with the excessive contractility of the capillaries. The phenomenon in question is a *white line* which can be produced at pleasure by drawing the back of the nail along the skin where the eruption is situated. On drawing the nail, or the extremity of a hard body, along the eruption, the skin is observed to grow pale, and to present a white trace, which remains for one or two minutes, or longer, and then disappears. In this way the diagnosis of the disease may be very distinctly written upon the skin; the word "Scarlatina" disappears as the eruption regains its uniform tint.

This white line, as above remarked, is peculiar to scarlatina. In measles, the red tinge is never uniform; the eruption is constituted by patches, elevations separated by interstices of healthy skin. Accordingly, the mode of proceeding pointed out above has for its result a red line between two white lines; and these marks disappear much sooner than in the case of scarlatina. In erysipelas, in the redness produced by a sinapism, in erythema produced by exposure to the sun, the white line is not seen. Accordingly, without attaching too much importance to this phenomenon, it may be looked upon as an additional sign to those we already possess for distinguishing the eruption of scarlatina.

Among the young patients who this year have presented the phenomenon of the white line, may be mentioned one, in whom scarlatina gave rise to delirium simulating meningitis, and who nevertheless recovered, by the use of no other therapeutic means than juleps containing two ounces of syrup of mulberries. In this child the trace left by the finger was most distinct, especially on the second day of the eruption. But, indeed, the observations which establish the fact may now be counted by hundreds. Always, when the eruption is well marked, there is produced by the friction of the nail a *white line*. A curious thing is, that when the eruption has become pale, and when the skin has resumed its usual pink colour, the line may still be produced, and lasts longer than on the skin which was not the seat of the scarlatina eruption.

M. Bouchut asked himself what could be the cause of this phenomenon. Why, in the case of an eruption due to a general hyperæmia of the capillaries, should a sudden and permanent decoloration be produced by friction? It is evident, according to this physician, that it depends upon a marked increase of contractility proportional to the severity of the disease, the regularity of the eruption, and the favourable condition of the strength. The irritated capillaries contract, expel the blood from their interior, and produce the white line. This excess of tonicity, of contractility of the capillaries, is not met with in other conditions; for, once called into action, the contraction persists for one or two minutes—a circumstance not met with in any other morbid condition.—*Journal de Médecine et de Chirurgie Pratiques*, December 1860.

### ON PROTRUSION OF THE EYES IN CONNECTION WITH GOITRE. BY DR ARAN.

At the meeting of the Academy of Medicine of Paris held on the 4th December last, Dr Aran, physician to the Hospital St Antoine, read a paper entitled, On the Nature and Treatment of the affection known under the name of Goitre, accompanied with Protrusion of the Eyes (*Goitre exophthalmique*, *cachexie exophthalmique*, *etc.*). In this paper, Dr Aran gave the particulars of the case of a young lady, who came under his care in the month of August 1857. The following is the account of the case:—Daughter of a highly nervous mother, affected herself, during eight years, with an hysterical affection accompanied with suppression of the menses, of a lymphatic temperament, this young person had been in good health till twelve years of age, when the catamenia appeared for the first time, and from that time were always scanty and little coloured. Ever since, she had been out of health; suffered from frequent fainting-fits; had a small, dry, spasmodic cough. Latterly, the respiration became rather short, and was embarrassed by walking or going up stairs. Towards the end of the summer of 1856, the patient became worse; the respiration was more frequent, and the pulse accelerated. In the following November, nervous symptoms showed themselves; there were trembling of the limbs, weakness of the legs, and irritability of disposition. Very soon afterwards the face and neck swelled, the eyes became prominent and haggard, there was frequent palpitation of the heart, and the respiration was oppressed. These symptoms, being considered to depend upon chlorosis, were treated, but without success, by chalybeates and change of air; the administrasion of iodine was equally unavailing. Dr Aran, being consulted at this time, recognised all the signs of the strange disease described by various authors, namely, double exophthalmos without impairment of vision; swelling of the thyroid gland; visible and thrilling pulsations of the heart and of the vessels of the neck; frequency of the pulse, but no fever; acceleration of the respiration; finally, dilatation and hypertrophy of the heart, as established by auscultation and percussion.

Ice was applied to the precordial region during nine months; veratrine and digitalis were administered on several occasions, during eight months, in increasing doses, until intolerance was produced, when the amount was diminished; while latterly, means were taken to regulate the menstrual function, and perchloride of iron was administered internally during two months. Under this treatment, amendment became manifest in a few days; the precordial dulness had diminished more than half an inch in every direction in eight days; in three months the general amelioration was very decided, and the cardiac dulness did not exceed the normal limits. The acceleration of the heart's action did not, however, disappear completely until a year afterwards. From that time the cure may be considered accomplished. Every trace of the old complaint had disappeared; and now that two years have elapsed, there is reason to hope that a relapse will not take place.

Dr Aran's paper terminated with the following conclusions:—

1. The affection known under the names of *goitre exophthalmique*, *cachexie exophthalmique*, is essentially constituted neither by exophthalmos nor by swelling of the thyroid body, but by an irritable condition of the heart and arteries of the neck, to which is very soon superadded dilatation with hypertrophy of the heart and large vessels of the neck.

2. This dilatation with hypertrophy cannot, any more than the irritability of the circulatory system, which seems to induce it, be considered as the basis, the starting-point of the disease.

3. Preceding these symptoms, or coinciding with them, are various disordered conditions of the digestive and nervous systems, and of the secreting organs, which leave no doubt that they are occasioned by a common cause; this common cause appears to be an affection of the great sympathetic.

4. The existence of this affection of the sympathetic is also proved by the occurrence of exophthalmos. This condition cannot be explained by a dilatation of the vessels, which morbid anatomy has failed to find; nor by the hypothesis of hypertrophy of the cellular and fatty tissues of the orbit,—an hypothesis which is irreconcileable with the rapid production of this phenomenon in some cases, its absence in others, and its greater development in one eye than in the other; while, on the contrary, it is perfectly explained by the influence of the sympathetic, as is shown by the admirable researches of Claude Bernard, an influence which is manifested in the contraction of the orbital muscle, which the researches of Henry Müller have shown to exist both in man and animals, and of which the action is undoubtedly to carry the globe of the eye forward.

5. This affection is curable by a suitable treatment, sufficiently long persevered in, the object of which should be to stimulate the contractility of the cardiac and arterial walls, to diminish the exaggerated irritability of the heart and vessels of the neck, and to combat the abnormal condition of the nervous system, and the altered condition of the blood when this exists. Among the therapeutic measures chiefly to be depended on are—application of ice to the region of the heart, administration of increasing doses of veratrine and digitalis, the employment of cold water, residence in the country, and at a certain period of the case the use of chalybeates, and more particularly of the perchloride of iron.—*Gazette Hebdomadaire*, 7th December 1860.

## SURGERY.

### SMOKING IN GONORRHŒA. BY GEORGE THOMPSON SHIPLEY, BOSTON.

A trivial question, possibly, but one which, even in my own limited practice, I have found a source of annoyance. The patient, if male, is almost certainly addicted to the use of pipe or cigar. He assents willingly to your strict prohibition of certain stimulating articles of food and of intoxicating liquors. He has, in fact, determined on so much abstinence before seeking advice. But then he asks, "May I keep on smoking? So-and-so did, and got well without trouble." What answer shall be given him? Is not the answer influenced in almost every instance by the personal habits of the medical adviser, either as a smoker or non-smoker? If facts were to show that this habit was, in actuality, deleterious in urethral inflammation, even in a trifling degree, is it not worth while to advise, not from personal preference, but in accordance with such facts? I have made careful observation on this point in several cases. I have reached a result opposed to my previous ideas, though in the daily habit of a post-prandial cigar, and sometimes two.

A. B., aged 28, weighing 180 pounds, of a plethoric habit, a large eater, and apparently in perfect health, applied to me for relief from a neglected gonorrhœa. He had been trying to "drink it off," and the result may be imagined. The head of the penis was swollen and of a dark-red hue. The discharge was profuse. He had chordee, with involuntary emission of semen at night. The urethra was tender to the touch through nearly its whole extent. It was his first attack. There was no increase of pulse, no constitutional disturbance, and but slight increase of desire to urinate. Digestion was unimpaired, appetite good, and action of bowels regular and copious.

I prescribed the "Compound Cubeb Powder" in two-drachm doses, three times daily, and ice-water injections after each urination. The patient was willing and anxious to adopt any regimen, with two exceptions. He could not leave his business for an hour, and would not give up his cigar after each meal.

He took the powders and injections for eight days. At the end of that time he came to me again. I found that he had voluntarily abandoned his cigars some four days previously, and that he thought by so doing he had hastened recovery, which seemed complete. I directed him to discontinue the injections, but to use the powders in diminishing quantity for five days longer, and left smoking to his own discretion. I saw nothing more of him for a fortnight. He then met me in the street, told me he was well, but had observed a singular fact regarding smoking. He had recommenced and abandoned the habit three times since our previous meeting, and had found with each renewal a reappearance of the urethral discharge, almost immediately supervening on placing the cigar in his mouth. He had given up smoking, he said, for "one while at least."

C. D. was a pale and debilitated patient, who had suffered with a mild gonorrhœa for some time, he did not know how long. It had never been painful, never inflamed the penis, never troubled him, except that it soiled his linen. He had never used stimulating liquors, but smoked once in a while. He would smoke oftener, but *noticed an increase of discharge after smoking*, and for that reason did not. Just at that time, my friend Dr D., of S. C., had sent me a new remedy for old cases of gonorrhœa—the tincture of gelseminum. I prescribed this in twenty-drop doses, inducing slight narcotism at each dose; and under its influence the patient speedily recovered.

Thus, in two dissimilar cases, smoking seems, by the patients' own statements, to have acted as an irritant to the lining membrane of the urethra. I should be pleased to learn how far observation of more experienced persons corresponds with my own.—*Boston Medical and Surgical Journal*, 22d November 1860.

### ON THE TREATMENT OF THE PURULENT OPHTHALMIA OF NEW-BORN CHILDREN.

### BY M. DEVAL.

Amongst the affections embraced by the specialty of the oculist, but of which he would seek in vain to monopolize the treatment, must be classed the purulent ophthalmia of new-born children. This disease, in fact, is one which every practitioner should be prepared to treat; for the mischief is so unexpected, the nature of the disease is so grave, and its progress is so rapid, that not a moment is to be lost in employing therapeutic means. Having more than once had occasion to observe the state of hesitation and embarrassment which this formidable disease has produced in otherwise skilful practitioners, we have thought it desirable to indicate to our readers the principal therapeutic means employed in such cases by Dr Deval, one of our most skilful oculists.

1. Six times in the twenty-four hours, pass between the eyelids, which have been slightly separated, a hair pencil dipped in a solution of from $2\frac{1}{2}$ to 4 grains of nitrate of silver in an ounce of distilled water.

2. In the intervals between these applications make repeated fomentations with an astringent liquid consisting of 15 to 30 grains of borax, sulphate of copper, or sulphate of zinc, in 4 ounces of distilled water. These salts are preferable to the subacetate of lead, which, when the cornea is ulcerated, has the disadvantage of producing opaque spots of which the persistence is indefinite.

3. Every morning (if purgatives are indicated) administer to the child 4 or 5 tea-spoonsful of the following mixture, which can be given to any patient under a year old: Compound syrup of chicory, and oil of sweet almonds, of each an ounce.

4. Where there is already perforation of the cornea, or where perforation is imminent, M. Deval endeavours to prevent procidentia of the iris, by dropping between the eyelids, three times a-day, 2 or 3 drops of the following collyrium: Neutral sulphate of atropine $\frac{1}{24}$ grain, distilled water an ounce; *or*, by rubbing in night and morning, over the forehead and temples, a portion, the size of half a filbert, of this pomade—mercurial ointment, half an ounce; extract of belladonna, half a drachm.

5. In the intervals between the applications of the collyria, it is well to keep the eyes of the infant covered with a piece of cold moist linen, or, still better, with a cold poultice of rice powder or starch.

Finally, in the most acute cases of purulent ophthalmia, when the energy of the treatment should be in proportion to the urgency of the danger, it is very useful to scarify once or twice a-day the chemosed mucous margin, or the palpebral conjunctiva only. These scarifications should be preceded and followed by tepid or cold irrigations, prolonged during three or four minutes, either of plain water, or of a chlorinated water, such as a solution of an ounce and a half of hypochlorite of soda in a pint and a half of water. The combination of these three agents, scarification, irrigation, cauterization, appears to us to constitute the most powerful plan of treatment. We have seen it put in practice by MM. Foucher, Deval, and Courserant, and we can affirm with confidence that there is no other plan of treatment which gives more satisfactory results.—*Journal de Médicine et de Chirurgie Pratiques*, December 1860.

## MIDWIFERY.

### RARE TERMINATION OF A FIBROUS TUMOUR OF THE UTERUS. BY DR E. LUMPE.

Mrs S——, in the middle of her fortieth year, healthy and strong, menstruated for the first time during her nineteenth year. From that time the menses were regular, but scanty. She married in her thirty-first year, and aborted of a three months' fœtus in May 1848, and again in October of the same year. From that time the menses were very copious. Very soon after her first miscarriage, the patient experienced pain in the pelvis, and at the same time she discovered a large swelling, which grew very slowly, and was at no time painful when touched. She took a course of mineral waters for three successive years; but the continuance of the menorrhagia having brought on an alarming degree of anæmia, she consulted Dr Lumpe in the year 1856, who prescribed chalybeates and quinine with considerable relief to her symptoms. In the summer of 1858, the menorrhagia recurred with severity at each menstrual period; but the patient paid little attention to it, as she was regular in respect to the period and duration of menstruation.

On the 2d of June 1859, she had a very severe attack of menorrhagia, which continued for fifteen days. At this time the fibrous tumour, which Dr Lumpe had examined on several previous occasions, and which was near the fundus of the uterus, had attained the dimensions of a man's head; it was tolerably moveable, of a uniform consistence, without fluctuation, and there was no great degree of sensibility of the neighbouring parts. During five weeks the patient remained free from menorrhagia; during this time the urinary secretion diminished, and the left foot began to become œdematous. The patient now began to have, several times a-day, discharges, often coming on suddenly, of a fœtid sero-purulent fluid, containing broken down organic matter. These discharges continued without intermission for four months. About the middle of August the œdema of the left inferior extremity had almost completely disappeared; during the same time, an abundant diuresis and diarrhœa had come on spontaneously. But some weeks later the anasarca returned in the feet, the face, the back, and the hands, and continued till the end of October. In addition to the anasarca and the symptoms of extreme œdema, anorexia, nausea, and sleeplessness made their appearance, and continued for two months. Towards the end of October, when the anasarca disappeared, the patient was so weak and emaciated as to be in a highly precarious condition.

From this time, contrary to all expectation, the condition of the patient began to amend. She gradually recovered her appetite and sleep, her face resumed its natural expression, and she slowly gained strength. The fœtid vaginal discharges ceased, and on the 29th of December 1859 she menstruated naturally. During all this period of the disease, the fibrous tumour had gradually diminished in size, and at length did not project beyond the symphysis of the pubis. Shortly before the reappearance of the menses, the patient had begun to pass, with the vaginal discharges, *calcareous concretions* of various sizes, similar to those which are sometimes found in the placenta. After the re-establishment of menstruation these concretions were passed in still greater quantity. From this time the patient rapidly recovered; the vaginal evacuations continued, nevertheless, for some months, and the tumour went on diminishing in size. On the 21st of June 1860, the body of the uterus, together with the tumour, constituted a round hard body about the size of the fist.—*Zeitschrift der K. K. Gesellschaft der Aerzte zu Wien*, 1860, No. 29.

### ON SEROUS DISCHARGES DURING PREGNANCY. BY M. DANYAU.

At the meeting of the Society of Surgery of Paris, held on the 19th December 1860, M. Danyau made some remarks on the above subject. It is sometimes noticed that, during the last weeks, or even during the last months of pregnancy, an intermittent serous discharge takes place, regarding the nature and origin of which there has been much difference of opinion. Naegalé thought that it could not be the amniotic fluid, but that it was secreted between the membranes of the ovum and the uterus; this opinion was generally received, until a fact observed by Ingleby, and cited by him in a memoir on uterine hæmorrhages, again raised the question, and made it probable that it was the liquor amnii. In the centre of the membranes the perforation through which the fœtus had passed was found, and nearer the placenta was another orifice which had given exit to the fluid. M. Dubois then met with another case of the same nature, where the small opening was of old standing, and its margins had a cicatrized appearance.

Such was the position of the question as briefly stated by M. Danyau, who laid before the Society the membranes from a woman who was delivered on the 12th of December, in whom a serous discharge had existed for fifty-six days. The placenta was inserted near the neck of the uterus; on one side was to be seen a large perforation, that through which the infant had passed, while opposite to it was another small opening which had allowed the escape of the amniotic fluid. The discharge, said M. Danyau, may be intermittent, and more or less abundant, according as the fluid escapes more or less rapidly, or accumulates between the membranes and the wall of the uterus.—*Gazette Hebdomadaire*, 21st December 1860.

### ON THE PERFORMANCE OF THE CÆSARIAN OPERATION AFTER THE DEATH OF THE MOTHER.

A writer in the *Gazette Hebdomadaire* quotes the following case from the *Union Médicale* of the Gironde:—A young woman, twenty-four years of age, of a good constitution and sanguine temperament, pregnant for the first time, was attacked with apoplexy during the seventh month of utero-gestation. M. Bonnet, who was called in, endeavoured ineffectually to combat the severe symptoms which had manifested themselves. When death appeared to be imminent he kept himself in readiness to perform the Cæsarian operation; this was commenced as soon as the heart had ceased to beat. The operation was performed in the usual way, and with the same precautions as if the woman had been alive. The infant was withdrawn from the uterus; after the lapse of a few minutes it began to respire feebly; a quarter of an hour later it groaned feebly; ultimately its life was saved.

The writer in the *Gazette Hebdomadaire* continues:—

It is matter of regret that M. Bonnet did not collect the facts of a similar nature which have already been recorded; by so doing he would have given a better idea of the interest which attaches to his own observation. We shall endeavour briefly to supply this imperfection in his paper.

In 1838 M. Devilliers published a thesis on the Cæsarian operation practised after the death of the mother; he collected 49 cases, which may be thus classified according to their results:—

7 infants were dead when extracted; 7 survived; 37 lived from a few minutes to several hours (the highest figures are 5, 15, 30, and 34 hours). This gives a total of 51, because among the cases were two of twins.

Since that time, we have collected 21 cases, of which the following are the results:—9 infants dead, 6 survived, 7 survived a few hours (the maximum was 5 hours).

We shall return presently to the cause of the very considerable difference between these two series of cases.

In reference to cases of this kind several questions arise, which have already been discussed repeatedly and at great length;—for instance, At what period of pregnancy is it proper to practise the operation? How long after death may it be performed with a chance of success? We think that these questions may be answered in the following way:—1st. The operation can scarcely be performed with any chance of success before the end of the sixth month; nevertheless, it may be attempted if the fœtus is about five months old. 2d. The operation should be resorted to instantly if the practitioner is called in in a case where the woman is already dead; or, should he have been in attendance previously, he should operate as soon as he has convinced himself that his patient is really dead.

Some curious facts in relation to these questions have been recorded; nevertheless, we doubt much the truth of several of them, such as the following:—A young girl of fourteen having died on the *forty-fourth day* of her pregnancy, was operated upon *thirty-nine hours* after death; the infant survived some minutes! Another woman, assassinated during the ninth month of pregnancy, was operated upon forty-eight hours after her death, and the infant lived for a quarter of an hour!

The following case is still cited, which, it is said, was well known, and believed to be true:—The Princess Pauline de Schwartzenberg died in consequence of several severe burns; twenty-four hours after her death an infant was withdrawn from her womb, and ultimately survived.

We alluded just now to the difference between M. Devilliers' statistics and our own. We believe that this difference may be thus explained: M. Devilliers has arranged his facts in chronological order, and we observe that the cases which we have just quoted, and others of the same kind, are the oldest, and are, consequently, the least to be depended on; his later cases present very nearly the same results as our own, which have been derived from contemporary authors, and present all the apparent characters of authenticity. In former days remarkable cases were much more readily received. The same is true with regard to other subjects, and in particular with regard to spontaneous combustion; these cases, formerly common, are no longer met with.

We have left out of sight the questions regarding the Cæsarian operation which are connected with religious dogmas, and among others the following:—May this operation be practised by other than professional persons? We believe that we may unhesitatingly answer, No; because it is necessary, in the first place, that the reality of the death shall be clearly established, and this can only be done with certainty by a medical man. If the law authorized such non-professional interference, we should be exposed to the frequent occurrence of such criminal procedures as the following, which we extract from the *Siecle* of Tuesday, 6th November:—

A correspondent at Zwolle (Holland) writes as follows to the Editor of the *Impartial* of Bruges:—A terrible crime, due to the fanaticism of a Roman Catholic priest, has created a most painful sensation in this neighbourhood. The wife of John Korf, of Lonneker, was on the point of being delivered, when the curé of this commune, the Rev. R. ——, took upon himself to practise upon her with a table-knife the terrible operation known ins urgery as the Cæsarian Section. It is unnecessary to say that this violent procedure, undertaken by a man an utter stranger to the science of surgery, was accomplished contrary to the rules of the art. The inevitable result was the death of both mother and child. The priest maintains in his justification, that the woman was in danger of death when he performed the operation, and that the obligations of the Catholic religion compelled him to sacrifice the mother in order to save the infant. But the statements of the fanatic are contradicted by facts; his victim was strong and healthy, and on that very morning had been at work in the fields. The authorities are investigating this crime, which we believe to be without precedent."—*Gazette Hebdomadaire*, 23d November 1860.

## THERAPEUTICS.

### ON SOME APPLICATIONS OF GLYCERINE. BY MR G. WILSON.

The discovery of glycerine by Scheele and by Chevreul had its first therapeutical application made in 1844 by Mr W. De la Rue, who applied it to a burn, and finding its use beneficial, recommended it to Mr Startin, who has since used it extensively in the treatment of diseases of the skin. In 1846, Mr Warrington took out a patent for preserving animal and vegetable substances by means of it. He was also the first to employ glycerine for mounting microscopic objects, for which it has proved so successful. Mr Wakley afterwards used glycerine as a remedy for deafness; it was afterwards recommended for the same purpose by Mr Erasmus Wilson and Dr Gardner. M. Cap was the first who employed it in the preparation of medicinal compounds. He found it extremely useful in effecting the solution of many substances, which were insoluble, or but sparingly soluble, in water. Morphia, he found, dissolved in glycerine in all proportions; and quinine in the cold formed with it a kind of cerate. Dr Crawcour, of New Orleans, afterwards introduced glycerine as a substitute for cod-liver oil. A very pure glycerine is obtained at Price's Candle Manufactory. Palm-oil is subjected to the action of heat and steam under great pressure; when at a temperature of from 500° to 600° F. the fatty acids take up their equivalents of water, and glycerine takes up its equivalent, and both distil over together. The only point which requires attention in this process is the due supply of steam and water, for if these be not present in sufficient quantity acroleine is formed. In the above way glycerine is obtained of the specific gravity 1·24, which contains 94 per cent. of anhydrous glycerine. This can be concentrated to the sp. gr. 1·26, which has 98 per cent. of the anhydrous body. There are a variety of purposes to which glycerine may be applied in pharmacy. First, in the preparation of a concentrated mistura ferri composita. Carbonate of potash and sulphate of iron may be dissolved in separate portions of glycerine, and then mixed; the carbonate of iron produced is dissolved at the moment of its formation, and will keep unchanged for any length of time. When required for the mixture, the necessary proportion of the solution (which can be made of any strength) is added to the other ingredients. The carbonate of iron is precipitated when the solution is mixed with water. Glycerine has also been recommended as a substitute for sugar in the preparation of the syrup of iodide of iron, but in this case its use had been found rather disadvantageous than otherwise. Solutions of the following substances in glycerine will be found of great use: ammonio-citrate of iron, eight grains to the fluid drachm, and citrate of iron and quinine, two grains to the fluid drachm. A solution of two grains of disulphate of quinine in a fluid drachm of glycerine might also be thought to be useful, seeing no acid was necessary to effect the solution. Quina might also be dissolved to the extent of one grain to a drachm, and tannin to the extent of eight grains in a drachm. In the last case the glycerine prevents the decomposition to which tannin was liable in aqueous solution. Preparations of senna and rhubarb eight times the strength of the pharmacopœia infusions may be made, and no alcohol is required for their preservation. Solutions of essential oils, such as cloves, cinnamon, and lemon, may also be made with glycerine in the place of spirit. It can also be used to preserve fresh lemon juice, and to maintain the soft consistence of pills and confections.—*Pharmaceutical Journal*, January 1861.

### OBSERVATIONS UPON THE RELATIONS EXISTING BETWEEN FOOD AND THE CAPABILITIES OF MEN TO RESIST LOW TEMPERATURES. BY ISAAC J. HAYES, M.D., LATE SURGEON TO THE SECOND U. S. GRINNELL ARCTIC EXPEDITION.

*Read before the Academy of Natural Sciences, Biological Department, April* 18, 1859.

During the late cruise of the "Advance" to the Arctic Seas, my attention was directed to some facts in relation to the capabilities of men to resist low temperatures, which, at the friendly suggestion of Dr Hammond, I have grouped together. With the permission of the Department, I will submit what I have written, prefacing it with the single remark that I have confined myself chiefly to what has fallen under my own immediate personal observation.

There is a great misapprehension existing in the popular mind upon the subject of Arctic life. It is, I believe, pretty generally thought that Arctic travellers are necessarily subjected to great hardship, in consequence of the lowness of the atmospheric temperature, and that almost superhuman powers are required to resist it. This is, I can but think, a great mistake. The animal economy, everywhere, adapts itself with greater or less facility to surrounding circumstances, and this power of adaptation is nowhere more strikingly exhibited than in the Arctic regions. The appetite and the digestive powers are, doubtless, more intimately concerned than any other of the animal functions, and, in the quantity and quality of the food consumed, we are led to look for an explanation of the cause which enables the inhabitants of Arctic countries so successfully to resist the cold.

During the stay of the "Advance" at Renssellaer Harbour, in 1853, '54, and '55, on the western coast of Greenland, in latitude 78° 37′, we had frequent intercourse with a tribe of wandering Esquimaux, numbering in all about one hundred and fifty souls, inhabiting the shores of the head waters of Baffin's Bay, from Cape York to the mouth of Smith's Strait. These people live mainly without fire. The land being destitute of wood, and none being drifted to them from the sea, they had no means of creating an artificial temperature except with a small lamp—merely a stone dish—with blubber for fuel and moss for wick. The flame of this lamp gives very little heat, and is barely sufficient to melt from the snow the water which they require, and to light their hut during the dark period of winter. These huts are often built of snow. Their permanent habitations are, however, constructed of stones and moss, and are about ten feet in diameter, by from five and a half to six in height. But these huts they are compelled to abandon during midsummer and midwinter; in midsummer, in consequence of the snow melting and pouring down through the roof; in winter, by reason of the ice belt along the land becoming so thoroughly solidified and widened as to render it inconvenient for them to reach the open water to the westward, upon which they are dependent for their food. In summer they live in seal-skin tents pitched near the landing-places of the Auk *(Wora Allar).* During midwinter they live in the before-mentioned snow houses. These houses are constructed of cubical blocks cut from a hard drift, and are from six to ten feet in diameter, and from five to seven feet high. They are placed either on a point of land projecting far out into the sea, or on the ice, near the open cracks. The walls of the hut vary from six inches to a foot in thickness; the cracks between the blocks are carefully filled with loose snow, and the entrance through a curved passage is closed on the inside by a large block of snow or a piece of bear-skin. In one corner is placed such a lamp as I have already described. One-half of the floor of the hut is raised about a foot, on which they spread bear and seal-skins. This serves them both as bed and sitting-place.

The temperature of their huts ranges from zero to the freezing-point, and is kept thus elevated, mainly by the heat radiated from the persons of the occupants; yet, with this seemingly unendurable temperature, they appear to live in comfort; the women performing all the necessary household duties, such as sewing, preparing skins for clothing, etc.; the men in making and repairing their implements for hunting. The outside temperature varies from thirty to seventy degrees below zero. No matter how low the temperature, provided the air is calm, they do not hesitate to shift their quarters as occasion may require, and with their families and domestic furniture upon their sleds they travel sometimes forty or fifty miles at a single march before meeting a favourable place for building another hut.

From these huts the men roam over the ice-fields with their dog-sledges in wild pursuit of the bear, or, slightly protected by a snow wall partly closing around them, they watch at the open cracks for the walrus and narwhal, or for the seal at their little blow-holes. After being absent for days together, seeking rest and shelter by throwing themselves upon a piece of bear-skin upon the ice, or if blowing, in a temporary snow hut. Their clothing at this period consists of a bird-skin shirt, bear-skin pantaloons, boots, and mittens, dog or bird-skin stockings, and a fox-skin coat, with an attached hood covering the head. This coat is always taken off when entering the hut.

My object in dwelling thus minutely upon the habits of this people you will readily appreciate. Living virtually without fire, most meagrely dressed, dependent at the same time upon the hunt for every necessary of life, and almost daily exposed, in the pursuit of game, to the very lowest temperature, we are astonished at their complete indifference to the cold; not only do they seem indifferent to it so far as concerns their physical comfort, but they are able to resist all of its depressing influences. They are a strong, robust, and healthy race. Scurvy is unknown amongst them, and I have never known or heard of an instance of tubercular disease.

I think you will agree with me in what was stated in the outset, namely, that we must look for an explanation of this wonderful power of resistance in the quality and quantity of the food consumed. They subsist entirely upon animal food—the flesh, mainly, of the walrus, seal, narwhal, and bear; and the quantity which they eat seems really enormous. I have frequently seen an Esquimaux hunter, when preparing for the hunt, eat from six to twelve pounds of meat, about one-third of which was fat, and I should place the daily consumption of the men at from twelve to fifteen pounds; and, in this large consumption, they find their shield against the cold. This food is mostly taken raw; and in their long journeys they stop from time to time, unlash their sledges, and cutting off strips of frozen blubber, eat them with apparent relish. I do not believe that they could live upon a vegetable diet.

The same laws govern the Esquimaux and white men, and just in proportion as we of the "Advance" accustomed ourselves to the diet of the Esquimaux did we gain power to expose ourselves with impunity to low temperatures. We found ourselves continually craving animal food, and especially fatty substances, which, to us in these latitudes, would be exceedingly distasteful. Frozen blubber became quite palatable, and during the second winter, when the temperature of the cabin was rarely above 45°, and often as low as zero, it was found necessary by Dr Kane, in order to protect his men against the bad effects of the salt, to guard the slush barrels by the strictest orders.

The process of acclimation with us was gradual. I remember well how, in the autumn of 1853, we suffered intensely from temperatures which a year later produced no impression whatever upon us, and I am satisfied that this increased power of resistance was in direct proportion to our ability to eat and digest animal food. During a later period of the cruise, some of the party lived precisely the life of the Esquimaux during three winter months, entirely without fire for purposes of warmth, without suffering any serious inconvenience or discomfort from the low temperatures.

It is worthy of more than the mere passing remark, that the climate is one of unusual healthfulness, and that scurvy and phthisis are unknown among the natives. In relation to the last-mentioned disease, I give the fact without comment or opinion; with regard to the former, I will remark, that whenever it has occurred in vessels visiting the Arctic seas, it has been mainly owing to accidental causes which experience has taught us to avoid. These are: salt food, cold, and the darkness of the long winter night, with the depressing moral and physical influences which it carries in its train, and, as an occasional exasperating cause, excessive exertion.

For the use of a salt diet there is now no necessity; and if we bear in mind the fact, that whenever the crews of vessels wintering in the Arctic seas have been attacked with scurvy, they have subsisted invariably upon such a diet, we will at once perceive how all the above-mentioned causes of its development operate together to produce disease. In the first place, the salt meat is injurious in itself, and will not, in any climate, sustain the human body in health; and, in the second place, if it could be taken with impunity, so far as the salt is concerned, a sufficient quantity of it could not be eaten or digested to enable the system to ward off the depressing influences of the cold and the darkness. With a good and unlimited supply of rich fresh animal food, these last-mentioned causes either have no actual existence, or are easily avoided. The cold only becomes a predisposing cause of disease when the vital forces are not sustained by proper alimentation. The same may be said of the darkness, although there is, doubtless, a cause independently operating upon man as upon plants placed under similar circumstances; yet rich food, plenty of water, exercise, good ventilation even at the expense of temperature, and last but not least, a healthy, cheerful tone, will, in every case, counteract the ill effects of the long-continued darkness.

A most singular effect of the use of salt food was observed among the dogs. These animals had never been accustomed to such a diet. They could not eat it except in small quantities; and the salt of the meat, the cold and darkness, operating together upon their feeble bodies, developed a singular *epilepto-tetanoidal* disease, which ultimately destroyed nearly every animal which Dr Kane took with him from Southern Greenland, or afterwards procured from the natives of Smith's Strait. The same was, from time to time, observable among the men, and, doubtless, for the same reason.

I have stated that the natives for the most part eat their meat raw, and having availed myself of the knowledge of this fact to great advantage, I would suggest it to my brethren of the profession. I have frequently found that when the stomachs of very scorbutic patients refused cooked meats, that they could readily retain the uncooked flesh, if frozen, or, as our men expressed it, "cooked with frost," and in this state it seemed to antagonize more immediately the scorbutic condition. The operation of freezing destroyed entirely the repulsiveness of the raw flesh, and the walrus and seal meat, which was found best suited to their wants, was very generally thus preferred by the sick. They often relished it, especially if acidulated with a little vinegar or lime juice, when they could take nothing else.

While fresh animal food, and especially fat, is absolutely essential to the inhabitants and travellers in Arctic countries, alcohol is in almost any shape not only completely useless, but positively injurious; and in this view I am fully sustained by the well-qualified judgment and experience of our enterprising and indefatigable friend, Dr Rae, whom we had the pleasure, not long since, of welcoming to the Academy. So well am I convinced of this fact, that, in the expedition now organizing to the Arctic seas, I shall not only not give it habitually, but will carefully guard against taking any one with me who is addicted to its use. Circumstances may occur under which its administration seems necessary—such, for instance, as great prostration, from long-continued exposure and exertion, or from getting wet—but then it should be avoided, if possible, for the succeeding reaction is always to be dreaded; and, if a place of safety is not near at hand, the immediate danger is only temporarily guarded against, and becomes, finally, greatly augmented by reason of decreased vitality. If given at all, it should be in very small quantities frequently repeated, and continued until a place of safety is reached. I have known most unpleasant consequences to result from the injudicious use of whisky for the purpose of temporary stimulation, and have also known strong able-bodied men to have become utterly incapable of resisting cold in consequence of the long-continued use of alcoholic drinks. I do not believe that it has a single useful property, not possessed in a tenfold degree by other stimulants; and under this head I rank tea and coffee. So valuable are both of these, that I am at a loss to say which is best. The English Arctic explorers almost invariably use tea, and so do the Russians; but Dr Kane's parties, after repeated trial, took most kindly to coffee in the morning and tea in the evening. The coffee seemed to last through the day, and the men seemed to grow hungry less rapidly after taking it than after drinking tea, while tea soothed them after a day's hard labour, and the better enabled them to sleep. They both operated upon fatigued and over-tasked men like a charm, and their superiority over alcoholic stimulants was very marked. The virtue of coffee used under the above-mentioned circumstances I cannot overpraise; the only drawback to its frequent administration being the difficulty of preparing it, when the atmospheric temperature is low and the traveller is obliged to depend upon a lamp with which to melt and boil his water.

These facts I submit with comment, leaving for those better qualified to determine whether they throw any new light upon the highly interesting and important physiological questions which they involve.—*American Journal of the Medical Sciences*, July 1859.

# Part Fourth.

## MEDICAL NEWS.

### MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XL., 1860–61. MEETING III.

*Wednesday, January* 9, 1861.—BENJAMIN BELL, Esq., President of the Society, in the Chair.

#### I. TUMOURS OF THE MAMMA.

*Mr Edwards* showed five mammæ which he had lately removed on account of morbid growths in their substance. In three cases the disease was scirrhus, and the specimens showed well the characteristic retraction of the nipple. In none of these cases was any of the glandular structure remaining; there was merely a hard marbly knot embedded in a mass of fat. The two other specimens were examples of sero-cystic disease. In one case the cysts were proliferous, their cavities being filled up by secondary cysts, which grew from their walls.

#### II. ANEURISM OF THE THORACIC AORTA.

*Dr Watson* showed a specimen of aneurism of the thoracic aorta.

The subject of this case was a man whose femoral artery had been successfully ligatured three years ago, on account of popliteal aneurism.

The patient died suddenly, having suffered for some time from neuralgic pains, and having had slight roughness of the voice. Dr Watson, suspecting the existence of an intra-thoracic aneurism, had examined him very carefully, but had not discovered any physical signs of the disease. At the *post-mortem* examination, there was found to be an aneurism of the posterior part of the left side of the arch of the aorta, which had burst into the posterior mediastinum; the blood had passed down as far as the root of the left lung, had there ruptured the pleura, and death had been caused by hæmorrhage. The aneurism had pressed upon the trachea, and laid bare several of its rings. The œsophagus also had been laid bare, and, apparently, there was nothing but its mucous membrane between its canal and the blood. The popliteal and femoral arteries had undergone the changes usually met with in such cases.

#### III. CHOPART'S AMPUTATION.

*Dr Watson* showed a cast, and the bones of the leg and part of the tarsus, taken from a case where Chopart's operation had been performed eighteen months ago. The preparation showed well the rotation of the bones which had taken place, so that the anterior surface of the astragalus and os calcis was turned downwards, and had been pressed upon in walking. The result of this was, that scales of bone came away, and kept up suppuration. The patient was suffering from phthisis (of which she died); so that the idea of any further operative interference could not be entertained.

#### IV. OBITUARY NOTICE OF PROFESSOR RETZIUS.

*Dr Charles Wilson* read an obituary notice of the late Professor Retzius. (This paper will be published in the next number of this Journal.)

*The President* expressed, in the name of the Society, the obligations under which they had been placed to Dr Wilson for his very interesting and eloquent account of Professor Retzius.

*Dr Gairdner* expressed a hope that other members of the Society would be induced by Dr Wilson's example to produce similar papers. Dr Gairdner would not encourage the writing of indiscriminate eulogia; but he thought, when a man's name had been allied, like that of Professor Retzius, with the progress of science, that it was both a duty and a pleasure to lay before his professional brethren some account of his labours.

### V. WAXY OR AMYLOID DISEASE OF THE KIDNEY.

*Dr T. Grainger Stewart* read a paper on the waxy or amyloid form of Bright's disease.

(This paper will be found at page 710 of the present number of this Journal.)

*Dr W. T. Gairdner* wished to say a few words on Dr Stewart's paper; and, first of all, to thank him for it. The paper bore the stamp of careful original observation, and would no doubt be found to contain important truth, and to be an addition to our knowledge of the obscure subject to which it referred. Dr Gairdner found great difficulty in indicating how far his own views corresponded with those of Dr Stewart, and in what respects they differed. Having had the different forms of Bright's disease under daily observation for many years, he could well remember cases in which, as in those narrated by Dr Stewart, the waxy degeneration was attended by a copious flow of urine; but whether this was a general law as respects the waxy degeneration, and in it alone, was by no means so clear. Again, Dr Gairdner had no doubt of the fact noticed by Dr Stewart, that in some cases, at all events, of the earlier stages of the waxy degeneration, there was no albuminous urine; but this too was a rule with exceptions, for in other cases the albuminuria long preceded the apparent degeneration of the kidney. Now, if this peculiar change in the structure of the kidney and other organs (which Dr Gairdner preferred still to call "waxy," till its chemistry was more conclusively settled), if this change could occur without albuminuria, and without dropsy,—if it were thus only indirectly related to the symptoms proper to Bright's disease,—the question arose, Is it fairly entitled to be called a *form* of Bright's disease at all? Is it not rather a separate lesion, coincident with Bright's disease in some cases, and separate from it in others? The question was a difficult one to answer; and Dr Gairdner recommended Dr Stewart still to keep it in view, and not to consider it decided upon the basis of the observations already made. They had an example of the danger of hasty generalizations in the errors which had been promulgated at one time in respect to the collateral pathological form of the fatty degeneration. Most members of the Society would remember that it was for a brief period a favourite dogma, emanating from the London school, that "fatty kidney" was not only one *form* of Bright's disease, but in very truth the essence of the disease; that Bright's disease and fatty kidney were convertible terms. Such was the doctrine originally taught by Dr George Johnson in his first memoir in the *Medico-Chirurgical Transactions.* There could be no doubt now that this was a very enormous error; for he (Dr Gairdner) had had ample proof in his own experience, within a very short period after Dr Johnson's paper was published, not only that in many cases of Bright's disease the kidney was not at all fatty, but, conversely, that in certain cases of fatty kidney there was neither albuminuria nor dropsy, nor any other symptom of Bright's disease properly so called; and that, therefore, so far from fatty degeneration being the only true form of Bright's disease, it was not even entitled to that name at all, unless it occurred in connection with some other morbid change. Dr Gairdner did not venture to say positively that the same thing was true of the waxy kidney; but, on the whole balance of evidence, he inclined to the opinion, that the state which gives rise to the symptoms of Bright's disease is something quite different both from the fatty and the waxy lesion, although often combined with both. What the essential change is—the change that causes albuminuria, dropsy, anæmia; in other words, the symptoms of Bright's disease proper—had never yet been demonstrated, nor were we much more advanced in relation to that subject than we were ten or even twenty years ago. Without being greatly inclined to dogmatize on the subject, he (Dr Gairdner) often reverted to his old idea, as brought forward in his first paper read to that Society, nearly thirteen years ago (on April 19, 1848),[1] that the essential change, in all cases of true Bright's disease, was a sort of catarrhal condition of the uriniferous tubes—a change not very dissimilar to that occurring in chronic bronchitis of the smaller air-tubes. On this might follow, or with this might concur, numerous lesions, desquamation, impaction of the tubes with epithelium, fatty degeneration, waxy degeneration, interstitial atrophy, cysts; any of these, separately or combined, and combined in every possible proportion, just as you might have, along with bronchitis of the smaller tubes, emphysema, abscess, ulceration, gangrene, pneumonia, and atrophic lesions of the lung, separately or together, in the same specimen. The whole subject, however, was surrounded with difficulties, which demanded much more investigation; and he trusted that Dr Stewart would continue his researches from his own point of view, so as to obtain additional facts by which to test the correctness of all the general theories. There was only one observation he would make in conclusion. It might be true that, in some cases of Bright's disease, the absolute daily quantity of liquid urine was habitually in excess; but in the more advanced stages of the same cases, it would be found to be diminished; and in all cases of genuine Bright's disease, Dr Gairdner believed the quantity of real urine, as measured by the amount of urea passed in the twenty-four hours, would be found to be more or less diminished in proportion to the functional and structural disorder of the kidney.

*Dr Bennett* remarked on the interesting character of Dr Stewart's paper, and on the credit due to him for having selected as the subject of his first paper before this Society, a topic requiring for its elucidation considerable clinical observation and pathological research. Dr Bennett must, however, object to the term applied to the degeneration in question. *Amyloid* means something resembling starch; now, in what respect waxy degeneration resembled starch he had always been at a loss to understand. We know very well what starch is; it is a substance having a peculiar structure, and becoming blue on the addition of iodine. But the kidneys are never turned blue by iodine; it is said, indeed, that on the further addition of sulphuric acid a bluish or purplish tint is occasionally produced. Dr Bennett had frequently endeavoured to obtain this reaction, but had not succeeded more than once or twice. His former assistant, Dr Carter, whose researches on this subject were well known, had very rarely been able to show it to him. If, therefore, this tint was so rarely met with, he was at a loss to comprehend why we should call amyloid something which so little resembles starch. Dr Bennett was in the habit of applying the term amyloid to certain bodies which are met with in the brain, the choroid plexuses, and the prostate gland, and which in structure do resemble starch. They are not starch, for they are not turned blue by iodine, and are chemically different; but they resemble starch granules in having a concentric structure, and to such bodies he would restrict the term amyloid. Dr Bennett preferred the old term waxy, and always employed it in speaking of this degeneration. The affected organs became dense, hard, and semi-transparent at their cut edges, like bees' wax; and therefore the term waxy, which involved no theory, was much preferable to amyloid, which only introduced confusion.

Dr Bennett considered that the great practical value of Dr Stewart's paper was the endeavour to show that the symptoms of waxy degeneration of the kidney are different from those which are met with in the other altered conditions of the organ usually included under the term Bright's disease. As to what Bright's disease is, Dr Bennett thought there was no difficulty: it is the disease described by Dr Bright, where persistent albuminuria is associated with dropsy and diseased kidney. When we come to consider the morbid anatomy of the disease, we find that the symptoms may be connected with different conditions of the kidney. The two leading varieties are the fatty and the waxy. Acute inflammation of the kidney may produce the same symptoms; so may desquamative nephritis; but the two chronic forms are undoubtedly the waxy and the fatty. These two are generally confounded together, at least the diagnosis between them has not hitherto been clearly pointed out. But now it would appear that in the waxy degeneration there is, at least in the early stage, a greatly increased flow of urine; whereas we know that in the fatty the amount of urine is invariably diminished. This is a point of immense importance; it cannot as yet be said to be established, but it is clearly indicated in Dr Stewart's paper.

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[1] See Report in *Monthly Journal*, vol. x., p. 833, "On the Pathological Nature of Bright's Disease."

Dr Bennett's attention had first been directed to this subject by the case of a man in the clinical ward who suffered from excessive thirst, and who passed 200 ounces of urine daily. There was no sugar in the urine; and the case might no doubt have been described as one of diabetes insipidus, but Dr Bennett had preferred the term polydypsia. The man died, and there was found to be waxy degeneration of the spleen, liver, and kidneys. So matters remained until the case of Burns, recorded by Dr Stewart, came under observation. At that time Dr Bennett gave instructions that the quantity of urine passed daily by every individual in the ward should be carefully ascertained. One curious result was, to show that the quantity of urine passed daily is generally much under-estimated. In a hundred cases which were examined, it was found that, instead of 30 or 40 ounces, many passed daily 60, 70, or 100 ounces; and then it was that an attempt was made to discriminate between those cases of disease in which the urine is increased, and those in which it is diminished.

With regard to the treatment of waxy degeneration of the kidneys, nothing very satisfactory could be said. We are still ignorant of the real nature of the lesion, so it was not to be expected that we should be able to treat it satisfactorily. Still Dr Bennett had no doubt that strong diuretics were of service both in cases where all hope had been abandoned, and in cases where Dr Johnson and other London physicians would say that diuretics should not be used. Some remarkable cases had occurred in the clinical wards, where patients had been admitted for the second or third time, suffering from enormous dropsical effusions; and where, under the use of half-drachm doses of super-tartrate of potash, given three times a-day, the urine had increased in quantity, had ceased to be albuminous, and the dropsy had disappeared. It had been supposed that, in acute cases of Bright's disease, it was dangerous to stimulate the kidneys. Dr Bennett must confess that he considered this danger futile. Even in acute cases, where there was some blood in the urine and pain in the loins, he had given the super-tartrate of potash, and had never seen any bad effects follow its employment. When diuresis was induced, the amount of albumen in the urine almost always diminished, and the dropsy disappeared. Dr Bennett was therefore of opinion, that we should not be deterred from using diuretics even in acute cases. He thought it was Dr Christison who, some years ago, arrived at the same conclusion, in opposition to what was then the generally received opinion. With regard to the *modus operandi* of diuretics, it consisted in removing obstruction; the tubes being blocked up, there was an obstacle to the passage of the urine, and dropsy resulted; but if the kidneys could be stimulated to act freely, the tubes were washed out, the obstacles were removed, and the dropsy disappeared.

*Dr Keiller* could fully corroborate Dr Bennett's remarks with regard to the good effects of diuretics in the various forms of Bright's disease. He had for some time been in the habit of using large doses of the acetate of potash in such cases, and had never seen cause to regret its employment.

*Dr Haldane* had listened with much interest to Dr Stewart's paper, and to the remarks of those gentlemen who had taken part in the discussion. Dr Haldane was not satisfied that amyloid was the best name for the degeneration in question, and for the present at least he would prefer employing the old term waxy. He had examined a very large number of organs affected with this degeneration, and he must say that the production of the blue coloration by iodine and sulphuric acid had been quite exceptional. He had been more successful in obtaining this reaction than Dr Bennett appeared to have been; still, in the large majority of cases, sulphuric acid merely deepened, or rendered redder, the colour produced by iodine. Under what special circumstances the blue colour was produced Dr Haldane did not know; it not unfrequently happened that, in the same organ, one section might give it, while many others would not. Dr Haldane, however, considered that the brownish red colour elicited by iodine alone was quite characteristic of the waxy degeneration. The reaction was exceedingly delicate; and by means of it, as seen under the microscope, the very earliest stages of the process could be recognised long before any change appreciable by the naked eye had taken place.

In speaking of the pathology of this degeneration, Dr Stewart had expressed the opinion that the change commenced in the muscular coat of the smaller arteries; that, in consequence of the degenerated condition of these vessels, the fluid portions of the blood escaped more readily than natural through their coats; that this exudation, containing the albumen and fibrine of the blood, coagulated within the organ, increasing its size and density; and that the alteration of the tissues was not of a specific character, such as the change in the walls of the vessels, but was the result of the presence of a simple albuminous or fibrinous exudation. With this opinion Dr Haldane could not altogether agree. There could be no doubt, indeed, but that the arterial coats were generally first affected; but Dr Haldane did not think that the subsequent changes in the parenchyma of the organ could be explained by the presence of a simple exudation. The effect of waxy degeneration was to thicken and indurate the coats of the vessels; and it was not easy to see how vessels so altered could allow the fluid parts of the blood to escape more readily than natural. Dr Haldane regarded the substance infiltrated into the affected organs as of a specific character, and not merely as an albuminous or fibrinous material. But not only was there a new material present in the parenchyma of the organ, there was an actual degeneration of the tissues themselves. That this was the case in the liver there could be no doubt. Masses of a glistening material could often be seen under the microscope within its substance, and the cells of the organ could be traced through the various stages of the degeneration; from rounded or polygonal nucleated bodies, they became converted into homogeneous, glistening flakes, from which all trace of a nucleus, and even of a cell wall, had disappeared. On adding iodine in such a case, the characteristic reaction would not be found limited to the coats of the arteries, but would be equally distinct throughout the whole substance of the lobules. This clearly showed that the substance infiltrated into the organ was of the same character as that into which the vessels had degenerated. In the case of the kidneys, the proof of this was not so easy; in these glands the degeneration was in great part confined to the vessels, or, at least, iodine did not in general produce its characteristic reaction upon the other tissues of the organ. Upon what this difference between the effects produced by the degeneration in the liver and kidneys depended, Dr Haldane did not know; possibly, in the case of the latter organs, the material was washed off by the urine before it had undergone complete transformation. Still, the waxy degeneration of the renal tissue could occasionally be proved; for Dr Haldane had met with cases in which the cells of the tubules, as well as the clear tubecasts found in the kidneys, had presented the characteristic reaction on the addition of iodine. In connection with this point, Dr Haldane might add, that he had once or twice found the same reaction in the case of epithelium cells and tubecasts passed with the urine during life; it was unfortunate that this reaction was so rarely obtainable, as, when present, it constituted undoubtedly the most valuable sign of the disease.

With reference to Dr Stewart's opinion, that an increased flow of urine distinguished waxy degeneration from the other forms of Bright's disease, Dr Haldane was not satisfied that this increase was invariable, nor that, when present, it was characteristic of this form. There could be no doubt that in other forms of chronic Bright's disease, the amount of urine might be increased considerably above the normal standard; and when an increase of the secretion was met with in connection with waxy degeneration, Dr Haldane was not satisfied that it was accounted for by the explanation proposed by the author of the paper. Dr Stewart ascribed the increased flow of urine to the degenerated condition of the arteries, which no longer regulated the supply of blood, but allowed a larger quantity of that fluid to pass into the vessels and capillaries beyond them. But this explanation was inconsistent with the fact that, in proportion as the degeneration of the arteries advanced, their calibre became diminished; and, as a necessary consequence, a smaller quantity of blood than natural could be transmitted to the vessels beyond them. Further, if it were true that the watery part of the urine was chiefly derived from the malpighian tufts, it seemed very strange that the secretion should be increased; for it was precisely in the vessels constituting these tufts that the degeneration was usually found most advanced. Dr Haldane thought that the only way in which an increase—or rather, he would say, in which the absence of a diminution—in the quantity of urine in such cases could be accounted for, was by keeping in mind the explanation of Virchow as to the mode in which the renal circulation was carried on. It was generally stated that all the blood of the renal artery passed through the malpighian bodies; but it had lately been established by Virchow—and his investigations had been confirmed by Dr Lionel Beale—that this was not the case, but that a considerable quantity of blood passed directly from branches of the renal artery into the vasa recta of the medullary portion, and from thence into the capillaries, without passing through the malpighian bodies at all. Now, this being the case, we could readily understand how, not only in waxy degeneration, but in other forms of disease of the kidney, where there was an obstruction to the passage of the blood through the vessels of the cortical portion, an increased collateral pressure would be exerted on the vessels of the medullary portion, from which, in consequence, an augmented flow of *watery* urine would take place; and in this way the whole quantity passed might not be below the normal standard.

Dr Haldane might allude to one other circumstance which rendered the diagnosis of the different forms of Bright's disease difficult, and one which he thought Dr Stewart had left rather too much out of sight,—he meant the frequency with which various forms of the disease were found combined in the same kidney. He believed that waxy degeneration might be associated with every other form of Bright's disease; and if the different forms gave rise to different symptoms, it was evident that such combination must tend greatly to complicate the diagnosis. The association of fatty with waxy degeneration had been alluded to by Dr Stewart, and undoubtedly it was of very frequent occurrence. Dr Haldane might, in conclusion, mention an example of another and a not uncommon form of combination which had come under his notice two or three days before. On examining the body of a woman who, till within a few days of her death, had been passing eighty ounces of urine daily, the kidneys were found to be examples of the so-called gouty (inter-tubular) form of the disease. The liver, on superficial inspection, appeared healthy, and its vascularity was not diminished; but on closer examination, some portions presented a peculiarly clear, glistening appearance, and, examined under the microscope, were found to be in a state of extreme waxy degeneration. This led to a special examination of the kidneys, when it was found that some of the vessels were in an early stage of the same degeneration.

*Dr Stewart* returned his thanks to the Society for the favourable reception accorded to his paper. In reply to the objections raised by Dr Haldane, he would remark, with reference to the presumed difficulty of the passage of an exudation through the indurated coats of the vessels, that, in the early stage, the coats of the vessels were not indurated; and if they became so, it was only at a much later stage. Further, he was still of opinion that the cause of the increased flow of urine was such as he had stated in his paper. In the earlier period of the degeneration, the calibre of the vessels was not diminished; and when such a diminution did occur, it was the cause of the scanty secretion met with at a much later period.

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## PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

### SESSION XIX.—MEETING IV.

*February 8th*, 1860.

Dr KEILLER, *President*, in the Chair.

### I. ON CAULIFLOWER EXCRESCENCE OF THE UTERUS DURING PREGNANCY.

*Professor Simpson* showed a preparation of the uterus and appendages of a woman who had died of puerperal phlebitis, coming on a few days after the termination of a delivery that had been prematurely induced because of the presence of cancroid disease of the cervix uteri. The patient had just completed the eighth month of pregnancy when Dr Simpson was first called to see her, in consultation along with Dr Alexander. She was very much reduced in strength, and presented a yellow, waxy appearance, from the loss of a large quantity of blood, which Dr Alexander had already ascertained to proceed from a cauliflower excrescence growing from the posterior lip of the cervix uteri, apparently about the size of a hen's egg, and which had entirely ceased under the internal administration of lead and opium. There was some little difficulty in deciding as to the existence of pregnancy, because the uterus was larger, rounder, and softer than usual, in consequence of excess of liquor amnii, and because the fœtal heart-sounds were masked, and rendered all but inaudible by the very loud cooing character of the so-called placental souffle, which could be heard all over the uterus. A careful examination of the other signs, however, and more particularly the state of the mammæ, the character of the uterine bruit, and the ballottement of the child, that could be felt through the vagina in front of the cervix uteri, rendered the diagnosis as to the reality of the pregnancy almost perfectly certain. The question had come to be, What was to be done with the patient? To leave the case to the efforts of nature, was to expose the patient to the danger of a fresh attack of hæmorrhage, which in her weak condition might very rapidly have proved fatal. Removal of the morbid mass was not to be thought of. The induction of premature labour, although it exposed her to the immediate risk of stirring up fresh hæmorrhage, and to the danger of sinking during delivery, seemed to afford the patient the best chance of safety, because she was then more likely to survive the fatigues of labour than if she had become further weakened by a renewed attack of hæmorrhage, and because there was more likelihood that the moderately-sized head of an eight months' child would pass the morbid growth without lacerating it, and without requiring any operative aid, than if pregnancy were allowed to go on to the full term, and the child's head were suffered to attain the dimensions of that of a perfectly matured fœtus. A sponge tent was accordingly introduced into the cervix uteri on the 17th of January, in the morning, and a second in the evening. During the day liquor amnii began to distil away, and continued to do so on the following day also, after a third sponge had been introduced. The uterus began to harden and adapt itself more closely to the fœtus, and the heart-beats became more distinctly audible. On the evening of the same day, the 19th, the sponges were removed, and pains set in in the evening, which during the course of the night became so severe, that about four o'clock in the morning of the 20th Dr Alexander was sent for, and at eight A.M. a living healthy child was born. Dr Simpson had anticipated that it might have been found necessary to extract the child with the forceps, and was prepared to have removed the morbid mass, should it have been found to present an impassable obstruction to the fœtal head. But the tumour, without being lacerated at all, had become compressed, and pushed backwards, so that the small and compressible head of the child had been forced past it by the unaided muscular efforts of the uterus. The patient was greatly exhausted, and on the fourth day afterwards began to show obscure symptoms of puerperal fever, under which she succumbed on the 11th day after her delivery.

At the *post-mortem* examination the peritoneum was found to be the seat of recent inflammatory changes of a low type, more particularly in the cavity of the pelvis: the uterus was still large, and its inner surface was covered in patches with a dirty, dark grey deposit, while some of the veins were seen to have become the seat of a thrombotic change, which had gone on to the puriform softening of the clot. A similar process could be traced as going on in the veins of the tumour, which was seated in the posterior lip of the cervix uteri, and which, as the members of the Society could observe, was softened and shrivelled up, or, at least, greatly diminished in size, and almost in a gangrenous condition. It would be seen that it was distinctly limited to the back lip of the cervix, and could easily have been completely removed. Perhaps the ablation of the tumour might have given the patient a better chance of recovery, as the inflammatory changes were most advanced, and had probably begun, in it.

Dr Simpson went on to say further, that he had seen several other cases of the same nature, and thought the circumstance worthy of remark, that the existence of cancroid disease of the cervix, even to a considerable extent, did not prevent the occurrence of impregnation. In the case which he had just related, the birth of the child had been accomplished without its having been found necessary to interfere with the morbid structure. But sometimes it proved so unyielding, more particularly when the whole circumference of the os uteri was involved, that artificial assistance had to be rendered; and twice in such cases he had found it necessary to divide the tumour at each side of the os, so as to permit the passage of the child. In another case which he had seen, the disease was of very great extent, stretching even into the rectum; and though the child was born prematurely at the seventh month, he had been obliged to make a very deep incision backwards towards the rectum, to allow of the transit of the child. Notwithstanding the severity of the injury, the patient recovered rapidly from the effects of her confinement, was out of bed within three days, and lived for a considerable period afterwards. He alluded to a case which occurred once in the north of England, where a line of practice had been adopted which he could not but regard as a wrong one. Craniotomy, viz., had been had recourse to, and destruction of the infant effected, in order to lessen the danger to the mother. Surely, if there was one case in the whole range of obstetric practice where, more than any other, we were justified in endangering a mother's life to save her infant's, it was in the case of a patient affected with such a disease as this, which must of itself prove fatal at no distant period. But, besides, the child could in most cases be brought into the world alive by simply dividing the mass, as he had stated, which was not a very dangerous operation; in fact, the division of it by the knife at an early stage and before inflammation and exhaustion supervened, was a proceeding more safe—even as regarded the mother—than allowing the labour to go on to an indefinite period, with at last the imperfect dilatation and spontaneous laceration of the obstructing and diseased tissues.

*Dr Keiller* stated that he had seen a case of labour in a woman affected with carcinomatous disease of the cervix, where the child was born without him finding it necessary to incise the cervix. He had met with no instance of alarming hæmorrhage in pregnant females from carcinoma of the uterus; but he had seen a case of pregnancy complicated with malignant disease of the mamma, which was at one time a source of most formidable bleeding. He succeeded, however, in arresting the hæmorrhage, and the patient survived the immediate effects of the labour, which occurred soon afterwards; but she ultimately sank.

*Dr Keith* related that he had met with a case of carcinomatous disease of the cervix uteri, which seemed to have come on during the course of utero-gestation. The lady had had some labours previously, which were always difficult; and he naturally anticipated that the existing pregnancy would be terminated by a labour even more difficult than the previous ones, when he discovered the existence of the morbid affection of the cervix. But during the progress of parturition the tumour became soft and yielding, so that the birth of the child, which was effected by turning, was actually accomplished more easily than that of most of the preceding children.

*Dr Myrtle* had had an unfortunate case of this description, where, on the accession of labour, he discovered that his patient was the subject of extensive fungoid disease of the cervix uteri. The labour was a tedious one; had to be terminated with the long forceps, as the patient was greatly exhausted; the posterior lip of the cervix gave way under the operation, and proved a source of hæmorrhage, which continued for some days. Puerperal fever set in, in addition, and the patient sank.

### II. AMPUTATION OF THE NYMPHÆ.

*Dr Keiller* showed preparations of the nymphæ, which had been amputated in two different cases under the following circumstances:—

1. Eliza Malony, æt. 15½, about eight years ago, while standing on a stool and stretching up to a looking-glass, had the stool upset, so that she fell on its edge, and injured herself in the pudenda. She bled slightly at the time, but required no medical aid. About three months ago, when sliding down the bannister of a railing, she overbalanced herself and fell on the stair, was stunned by the fall, and was carried home faint from the profuse bleeding that ensued. She recovered; but applied at the hospital for relief from the annoyance caused by the partial laceration of the nymphæ which was found to have occurred. An old cicatrized orifice—probably the result of the first injury—could be seen in the centre of the nymphæ, which was hanging from the side of the prepuce by a small neck. This narrow neck was simply cut through with scissors, and the bleeding that ensued was very trifling.

2. A patient had been long treated in the hospital for uterine pains and irritations of obscure origin, without much benefit. As the nymphæ were very large and pendulous, it was thought that their removal might have some effect in dispelling the symptoms. They were accordingly cut off on both sides, and the operation was attended with but little hæmorrhage.

*Dr Simpson* had sometimes seen an excessive amount of bleeding from operations on the nymphæ; and he spoke in particular of one case where this operation was being performed in a patient who was anæsthetized by means of ether, when the patient woke up whilst the vessels were being tied, and hæmorrhage occurred to a frightful extent ere the patient could again be quieted, and the operation completed.

### III. PECULIAR CONFORMATION OF THE NYMPHÆ.

*Dr Keiller* stated that he had at present in the hospital a patient in whom the nymphæ were large and thick, and presented this singular peculiarity, that they encircled the whole of the vulva, passing down on each side, and meeting behind in front of the fourchette.

*Dr Simpson* had seen a similar case, of which a cast had been taken. He had also in his museum a cast of the pudenda of a female who had had a double nympha on each side.

*Dr Myrtle* had lately seen a patient with varicose veins at the base of the nymphæ, which were 1½ inches long.

# SCOTTISH UNIVERSITIES COMMISSION.

## DEGREES IN MEDICINE.

We have on several occasions informed our readers of the steps which have been taken in reference to the ordinances of the Scottish Universities Commissioners, in regard to the granting of medical degrees in the University of Edinburgh. As the hearing before the Privy Council of the various parties interested has now taken place, and as the decision of that body may be expected immediately, we propose to give a brief narrative of what has been done during the last eighteen months.

The Commissioners appointed by the Universities (Scotland) Act published two ordinances, dated respectively the 6th August 1859, and the 19th March 1860, embodying regulations for the granting of degrees in Medicine in the University of Edinburgh. The first ordinance had reference to the standard of preliminary education to be required of candidates for medical degrees, to the duration and course of professional study, and to certain points regarding the mode in which the examination should be conducted. The second ordinance provided that the University of Edinburgh should grant three degrees in Medicine,—those, namely, of Bachelor of Medicine, Master in Surgery, and Doctor of Medicine; that the degree of Master in Surgery should be conferred on every Bachelor of Medicine who desired it; that the qualifications for the doctorate should in some particulars be raised; and that three examiners from the Colleges of Physicians and Surgeons of Edinburgh, and the Glasgow Faculty, should be associated with the medical professors in the professional examinations of candidates. It further made regulations regarding the studies of candidates, and provided for the recognition of a certain amount of attendance on extra-academical teachers.

The Colleges of Physicians and Surgeons of Edinburgh, the Glasgow Faculty of Physicians and Surgeons, and the College of Surgeons of England, being dissatisfied with these provisions, petitioned her Majesty in Council to withhold her consent from the ordinances, and prayed to be permitted to be heard by counsel before the Commissioners; and, in the event of the Report of the Commissioners being adverse to the petitioners, to be allowed to appear by counsel before the Privy Council. The petitions were granted, and the various bodies interested appeared by counsel before the Commissioners on the 2d July 1860. Having heard counsel, and considered the various petitions, the Commissioners made a special Report to her Majesty in Council, in which they expressed their adherence in every particular to the ordinances. The following sentence is quoted from the last paragraph of that Report:—"In conclusion, the Commissioners consider it their duty to state, that a careful consideration of these petitions, and of the arguments of counsel, instead of creating in their minds any doubt as to the expediency of the ordinances, has only convinced them that it is most desirable, for the interests of the University, that effect should be given to them without delay; and, above all things, that a decision should be obtained before the commencement of next session."

Shortly afterwards, notice was given by the Privy Council that the various bodies would be heard by counsel, and the hearing of the case was fixed for November; subsequently, however, the hearing was postponed, but took place on the 16th, 17th, and 18th of January. Some days before, cases were lodged at the Privy Council Office by the Scottish Medical Incorporations, the College of Surgeons of England, and the Senatus Academicus of the University of Edinburgh. A short abstract of these cases will inform our readers of the light in which the ordinances were viewed by the various bodies.

The *Colleges of Physicians and Surgeons of Edinburgh* and the *Glasgow Faculty* lodged a common case, in which they expressed their disapproval of the ordinances on the following grounds:—1st, The illegality of the institution of the degree of Master in Surgery; 2d, The inexpediency of the proposed surgical degree; 3d, The low standard of preliminary education required for the medical degrees; 4th, The leaving of the examinations too much in the hands of the Professors; and, 5th, The insufficient recognition of non-University or open teaching. The following passage, quoted from their Case, contains a summary of the objections of these bodies:—"In so far as the degree of Master in Surgery is concerned, they respectfully submit that they have shown that the University has no legal authority to institute the degree, either on the ground of 'inherent power,' or on the ground of express Royal grant. They farther submit, that they have shown that the institution of the proposed degree would not benefit the University, and would be injurious to the interests of the public and the profession; and also, that the mode in which the degree is to be conferred is bad in itself. With regard to the medical degrees, the petitioners respectfully submit, that it has been established that the standard of preliminary education required is much below that of other Universities, British or Continental; that it is below what, in the opinion of very distinguished men, it ought to be; that there is no sound reason for delay in elevating the standard; and that this elevation of the standard would be attended with benefit, and not injury, to the University. The petitioners also submit, that the deficiency which they have pointed out in the length of period of professional study for the degree of Bachelor of Medicine ought to be remedied; and that the examination in all the branches of preliminary education should precede the taking of the first professional degree. With regard to the question of examiners, the petitioners submit, that the examination in preliminary education should be conducted entirely by the Examining Board of the Faculty of Arts; and that it would be for the interests both of the University and of the public, that more influence should be given, in the Medical Examining Board, to those who are not themselves the teachers of the candidates. Lastly, the petitioners submit that it would be attended with benefit to the University and to the cause of medical education, were more liberal measures adopted in the recognition of other Medical Schools."

The *College of Surgeons of England* opposed the ordinances for the following "Reasons," which we quote from their Case:—

1st. Because neither the Commissioners nor the University of Edinburgh have any legal power to institute or grant the proposed degree of Master in Surgery (C.M.), either separately or as part of the proposed degree of Bachelor of Medicine.

2d. Because, even if the right exists, there is no necessity, in a public point of view, for the exercise of it.

3d. Because on many grounds it is not expedient that it should be exercised.

4th. Because the institution of such a degree would be highly prejudicial to the rights and privileges of the petitioners, the Royal College of Surgeons of England, and to the interests of the fellows and members thereof.

The *Senatus Academicus of the University of Edinburgh* also opposed the ordinances, though on grounds different from those of the other petitioners. They expressed their approval of that part of the Commissioners' ordinances which provided for the establishment of the degree of Master of Surgery; but they objected to the proposed constitution of the Examining Board for medical degrees, and to attendance on extra-academical teachers being allowed by the University in candidates for its degree. The following "Reasons" give an abstract of the opinions of the Senatus:—

"1st. Because, by virtue of the several Royal Charters ratified by Act of the Parliament of Scotland, passed in the year 1621, and of the power inherent in the Senatus by the constitution of the University, the Senatus Academicus of the University of Edinburgh have right to confer degrees in all the Faculties taught within the said University, and, in particular, in the Faculty of Medicine, which comprehends Surgery as one of its departments.

"2d. Because the power of conferring degrees in the several Faculties has not only been exercised by the University of Edinburgh, but its existence has always been recognised.

"3d. Because the power of conferring degrees in Surgery has been exercised by other Universities in this country;—as, for example, by the Universities of Glasgow and Dublin.

"4th. Because any invasion or limitation of the right of the University to confer degrees in Medicine and Surgery, would be prejudicial not only to the University, but to medical education and the interests of the public.

"5th. Because the introduction of examiners for degrees, who are not Professors in the University, is beyond the powers of the Commissioners, and is, besides, at variance with the constitution of the University, and the rights and privileges of the Senatus, and, moreover, would be prejudicial to the interests of the University, and to the cause of medical education.

"6th. Because the proposed continuance of the system introduced by the Town Council of Edinburgh, as patrons of the University, by which the teaching in extra-academical or opposition schools, as a qualification for medical degrees, was recognised, is at variance with the constitution of the University, and the rights and privileges of the Senatus and of the Professors, and would be prejudicial to the University.

"7th. Because the examination for degrees in Medicine and Surgery by examiners not Professors, and the recognition of teaching in extra-academical or opposition schools as a qualification for degrees, is virtually erecting a new extra-academic College, and would, under the provisions of the Universities (Scotland) Act, necessitate the introduction of a like system into the other Universities of Scotland, which would be at variance with the constitution of these Universities, and with the rights and privileges of the Professors in them, and would be prejudicial to the interests of the Universities.

"8th. Because the employment of examiners not Professors, would render necessary an application of the funds set apart for University purposes to a use not contemplated by the Statute, and would divert the money so applied from other and beneficial purposes for which it is required."

The hearing of the case before a Committee of the Privy Council took place on the 16th, 17th, and 18th January, the following being present:—The Lord Chancellor, the Earl of St Germans, Secretary Sir George C. Lewis, Lord Cranworth, the Duke of Richmond, and the Right Honourable R. Lowe. The Attorney-General and the Solicitor-General were in attendance as assessors.

Mr Roundell Palmer, Q.C., and Mr Dove Wilson, appeared for the Scottish Corporate Bodies; Sir Hugh Cairns, Q.C., and Mr Bevir, for the College of Surgeons of England; Mr Rolt, Q.C., and Mr Selwyn, Q.C., for the Senatus Academicus.

*Mr Palmer* opened the case for the petitioners. The objections to the ordinances which were now called in question he stated briefly to be, that the degree of C.M. (Master in Surgery) was absolutely illegal, and *ultra vires* of the powers of the University; that it was further unnecessary and inexpedient; that, supposing it were either legal or desirable, the examination provided and qualification required were insufficient; that the Board of Examiners was not fairly and properly constituted; and that the regulations restricting the attendance upon the non-academical lectures were extremely injurious to the professional and public interests involved. The Commissioners justified the creation of the C.M. degree on the ground of the "inherent power" of the University, as such, to grant degrees in any department in which it gave a full course of instruction. They alleged, also, that it was competent by the charters of the University; that it had been the custom of the University to create new degrees from time to time, as seemed to them expedient; that this right was supported by precedents derived from the practice of other Universities in and out of this country; that Surgery was included in the Faculty of Medicine; and that it was not necessary that degrees should be given each in a distinct Faculty.

Having regard to the eminent and distinguished names attached to the report, the importance of the subject under consideration, and the duty which the Commissioners had to discharge, the absence of minute and precise information on the subject manifest in the report, seemed to him, to say the least, surprising. Some of the errors into which they had fallen were so gross and flagrant, that the fact of their being found on the face of the report was conclusive evidence that the Commissioners had taken a great deal too much for granted, and had not sifted and examined the matter for themselves with that care and anxiety which it deserved. But for the most lamentable ignorance of their powers and of the true nature of a degree, the Commissioners would never have published the ordinances. He ridiculed the idea of an "inherent power" of granting degrees, and denied that the practice of the University gave any countenance to it.

*Sir G. C. Lewis*—The notion derived from the term "University," that such an institution could grant degrees of all sorts, was clearly a mistake. You need scarcely go into that.

*Mr R. Palmer*—The petitioners denied that the new degree of C.M. was a known degree in Medicine—they held that Surgery was a distinct Faculty, and that it was incompetent for the University to grant a degree in it. Sir W. Hamilton showed in a very clear and conclusive manner, that in the Middle Ages the Universities, being integral parts of Church and State, could not of their own authority organize new Faculties. The same authority also stated, that the Universities of Oxford and Cambridge have never introduced or attempted to introduce any new degree; and that, "in like manner, in all the Universities throughout Europe, which were not merely privileged but created by bull and charter, every liberty conferred, was confered not as an incident through implication, but by express concession." In supporting their dogma, that Surgery was in the Faculty of Medicine, the Commissioners committed the most egregious blunders. If he had not read the report with his own eyes, he could not have believed that a document emanating from so eminent a body could have contained a passage so replete with error in all its parts. "It is the practice," said the report, "of some foreign Universities to grant the degree of *Philosophiæ Doctor*, although the Commissioners are not aware that it was ever contended that there was a distinct Faculty of Philosophy." There the Commissioners showed themselves ignorant of the well-known fact, that *Philosophiæ Doctor* was only another name for the degree in the Faculty of Arts! That was indisputable.

*Sir G. C. Lewis*—There can be no doubt about that.

*Mr R. Palmer*—That showed the superficial manner in which the Commissioners had dealt with the subject, and also the failure of the system of sending back to the body who issued the ordinances the petitions against them, for its effect was only to solicit a forensic defence.

*The Lord Chancellor*—I don't think it impugns the principle of the system.

*Mr R. Palmer*—It shows how little good is gained by it.

*The Lord Chancellor*—In this instance perhaps it does, but it does not apply generally.

*Mr R. Palmer*—The extraordinary errors of the Commissioners did not, however, cease there. They alleged very positively that "on the Continent degrees in Surgery are granted by those Universities which are most distinguished as schools of medicine, the title of 'Doctor in Surgery' being conferred by each of the Universities of Paris, Vienna, and Berlin. What were the facts? The University of Paris never, in the whole course of its existence, granted a single degree in Surgery; and if the University of France, into which it was ultimately constituted, did so, it was because it possessed the express powers of an imperial institution. In the same way the University of Berlin never granted surgical degrees, till, in recent times, it was entirely reconstituted with power to do so. As to Vienna, he could not ascertain what was the practice there. The right of the University to give degrees in Surgery, derived from its possession of all the rights of the University of Aberdeen, was disposed of by the fact that Aberdeen enjoyed, by the bull of the Pope, only the powers of Bologna and Paris, neither of which Universities could have conferred this degree. Attempts of the University of Glasgow to grant surgical licenses were defeated in 1816 and 1826 by the unanimous finding of the Court of Session in the first instance, and in the second, by the finding of all the Judges of the same Court, except one, and by the unanimous decision of the House of Lords. Lord Brougham in 1854 gave his opinion that the practice in the Scotch Universities was in favour of the principle that the power to confer degrees must be by express grant. He had said enough to show that there was, at the best, serious doubt as to the legality of establishing this new degree; and when he had drawn their Lordships' attention to its inexpediency and injurious tendency, he trusted they would pause before they gave it their sanction. He need hardly tell their Lordships how well satisfied the public and the profession were with the way in which the College of Surgeons had hitherto discharged its duties; it was well known, and there was not the slighest allegation against that distinguished institution. The Commissioners of 1830 pronounced decidedly against the establishment of a new surgical degree; and the present Commissioners, who were bound by the Act to pay special regard to the recommendations of their predecessors, owned that they were led to a different view simply on account of the effect of the Medical Act of 1858; but he denied that that Act gave the University any ground for forsaking its academical functions and entering into competition with, and encroaching upon, the privileges of the profession. The new degree was foreign to the scope and spirit of a University, and was simply a surgical license. No test, no qualification, was required for the new degree of M.C. distinct from those for the degree of M.B., and hence it was a mere fiction—a pretext for enabling those with the latter degree to add Surgery to their practice without any additional qualification. And, to make the matter worse, the preliminary examinations were fixed at an excessively low standard—much lower than that of any other institution granting medical degrees—and far too short a time was prescribed for attendance on professional studies. The effect of this would be to send forth practitioners with the prestige which belonged traditionally to a University degree, but with qualifications inferior to those required by any of the medical colleges. The constitution of the examining boards were also objectionable, especially that of the Medical Board, where too much influence was given to the teachers of candidates. The recognition of extra-academical schools was illiberally and injuriously restricted—they were now to qualify to the extent of a fourth, instead of a third, as formerly. He hoped he had satisfied their Lordships that the measures proposed were both incompetent and inexpedient.

*Sir Hugh Cairns* followed on the same side. He called attention to the fact that the system established by the Medical Act of 1858 was a compromise on the part of the various medical and surgical bodies, which would be completely overturned by these new measures of the Edinburgh University, which were never taken into contemplation at the time of the compromise. The new degree was out of the power of the University of Edinburgh. He maintained it could only give this degree of C.M. by express grant, and he denied that any grant existed. It was of the essence of a Faculty, that a degree should be of the whole of a Faculty. A Faculty could not be cut up into bits. If the Medical Faculty included Surgery, where was the need of the new degree? The degree of M.D., in that case, should include Surgery. If it did not, then they must infer that Surgery was not in that Faculty. What was the relative status of an M.D. and a C.M.? Which had precedence? And if it were absurd and illegal to attempt to confer a degree in a part along with a degree in the whole, it was worse still to attempt to confer on any one a higher degree in a part of a Faculty than in the whole of it. Of course he had been assuming for argument's sake that Surgery was, as alleged by the Commissioners, included in Medicine. The Glasgow case was the only one in which, *de facto*, an attempt has been made by a University to exercise this right of creating a degree of Master in Surgery; and there the right was challenged, and by the courts of law was deprived of any practical effect. It was altogether a mistake of the Commissioners to say that the University of Dublin had granted a license in Surgery.

*Sir G. C. Lewis*—Does not the certificate of the University of Dublin allow the holder to practise as a surgeon?

*Sir H. Cairns*—Yes; but not by inherent powers, but by the express sanction of a special Act of Parliament. Let Edinburgh University give any testimonials it pleased—no one objected; but the petitioners insisted that it must obtain express permission of the State before it granted a surgical license to practise. Coming now to the grounds of expediency stated by the Commissioners, the learned gentleman denied that those holding the medical degree were put in a worse position than before; on the contrary, he held that their position was much improved. All that the Medical Act did was to prevent any one from passing himself off as what he was not. The Commissioners established a degree, not because it was a good thing in itself, but in order to obviate doubts as to the effect of the Medical Act. The Commissioners had no right to undertake this interpretation of the Act. He pronounced the new degree of C.M. a pure and simple deception upon the public; because it would lead people to believe that the degree of C.M. implied something more than that of M.B., that the man who held it possessed greater qualifications as a surgeon, the real truth being that he underwent no further test, and had proved no further qualifications. As to examinations, it was a disgrace to the Universities of Scotland that of all such institutions in the world they were the only ones which did not require a knowledge of Greek among the preliminary qualifications for a degree in Medicine. The Commissioners held so too, and yet adopted most pernicious delay in providing a remedy. The professional study required was also very deficient, as was very concisely and pointedly shown in the case for the petitioners. Students preparing for diplomas from the colleges must attend medical classes thirty-three months in all, those at the University only twenty-seven months. On the principle of a Dutch auction, the University seemed to be trying who could bid lowest. Then nothing could be more transcendently absurd than the idea that an M.B. should pass an examination in Greek before he could obtain the degree of M.D., as if a man who had not been able to get up Greek when a student at college would be able to do so during the three years he was engrossed in practice! The degree of M.D. was another part of the system of deception involved in the ordinances, for it made the public believe an M.D. was a better doctor than an M.B., whereas the only qualifications required were Greek and three years more of age. He denounced the preponderance of Professors in the Board of Examiners. He applauded the wisdom and liberality of the Town Council of Edinburgh in allowing extra-mural instruction to count in the examination, and expressed surprise that after the system had worked so admirably, and had had so happy an effect, the Commissioners should have restricted it.

*Mr Rolt, Q.C.*, next spoke for the Senatus Academicus. He contended that nothing more had been done than to adapt the University system of degrees to the advances which had been made in knowledge and science, and the changes which had taken place in the meaning of words. Because in the dark ages Surgery was a despised handicraft, surely the University was not to be prohibited from recognising the modern meaning of the term Medicine, which indisputably included Surgery. He insisted on the inherent power of a University to grant degrees. The power to settle the relative status, the degrees of the members of the University, must be an incident of such an institution. The only limit to grant degrees was necessarily that a University could not grant a degree in a subject in which it did not give full instruction. Being empowered to give, and giving ample and efficient instruction in Medicine, and including Surgery in their course of instruction, the University was entitled to give degrees in Surgery.

Any Faculty which was at any time permitted in any other University, it was competent for the University of Edinburgh to establish. A Mastership in Surgery having been instituted in the University of Glasgow, the University of Edinburgh had a valid right, under its charter, to give the same degree. He repudiated the idea that it was of the essence of a Faculty, that it could not be divided. That a Faculty could be divided was proved by the fact that the degree of Music belonged to the Faculty of Arts. Reason and convenience were all in favour of the new degree. That the University of Paris did not give degrees to the surgeons was because they rather looked down on them—the application of the surgeons for admission proved that they had no doubt as to the power of the University to grant the degree. At Salerno he maintained surgical degrees were granted, as well as at other Continental academies. At Glasgow, surgical degrees had been granted for the last forty years, and entitled the holders to be registered and to practise. He laid much stress on the opinions of Lord Glenlee, Lord Moncreiff, and Lord Fullerton, in favour of the power of the University to grant degrees; and asserted that no great judge or lawyer had given a decided opinion against that right. Lord Brougham expressed merely a doubt of the inherent power; and Sir William Hamilton's argument was directed against the exaggerated view of Sir C. Wetherall that a University could not exist without a universality of scientific instruction, and not to the question of degrees. Proceeding to the question of expediency, the learned gentleman declared that the Edinburgh School of Medicine would never have arrived at its present eminence if its degree of M.D. had not conferred the right to practise as a general practitioner; and as by the construction put upon the Medical Act, and fostered by the petitioners, that right was called in question, it was necessary for the interests both of the University and of the profession to establish it by the new degree. He next addressed himself to the question of expediency. If the University was to be sustained as a medical school, it was necessary that it should have the same facilities for granting professional degrees as unacademical institutions. The College of Physicians and the College of Surgeons held a combined examination and gave a double degree—the University claimed only the same privilege. There was no attempt at deception at all in the new degree. The examination for the degree in Medicine was not confined to that branch, but was extended also to Surgery; the student, therefore, who passed that examination had a perfect right to a double degree. At present the Doctor of Medicine was defrauded of his proper testimonials, and having proved his qualification in both branches was acknowledged as proficient only in one. There was an express enactment of Henry VIII. by which Medicine was declared to include Surgery. Then as to qualifications, he maintained that ample security was taken that they should be of a high degree. True, the University did not compel attendance at a number of classes—they left the student at liberty to attend or not as he chose, and to get up the subjects to which they related in his own way; but care was taken that the examination should be so high and stringent that no one could pass it who had not gone through the whole course of study. That, however, had been resolved upon by the University advisedly and on mature reflection. The University afforded within its walls a more complete system of instruction in Surgery, as well as all other branches of the healing art, than any other University in the kingdom; its examination was high and above suspicion, and the expediency of its granting the degree of C.M. was indisputable. If their right to do so were taken away, let their Lordships reflect what would be the consequence; let them consider the declaration of the Commissioners, that if the University was to be deprived of the right of granting licenses for general practice, their degrees would become mere honorary distinctions, and would "ensure the ruin of the University as a Medical School." The question of Greek being included in the preliminary examination was one of the minor points which ought to be left to the Commissioners and Senatus; it was, at any rate, a greater proof of a man's acquirement that he could undergo an examination in Greek at twenty-five or twenty-six, after three years' medical practice, than that he could do so when fresh from the cramming of the academy. He pointed out the danger of appointing extra-academical teachers who held the view that the necessary qualifications were insufficient as members of the University examining board—their bias would be prejudicial to the University. He next turned to the question of extra-mural teaching. The Act directed the Commissioners to regulate and promote the advancement of learning within the University; and he submitted that, in allowing attendance on extra-mural teachers to qualify to a certain extent for graduation, the Commissioners were violating the integrity of the University, and exceeding their powers. The Commissioners themselves expressed a suspicion that they had gone too far in this respect.

*Sir G. C. Lewis*—It is clear the Town Council and University have had the power of allowing extra-mural lectures.

*Mr Rolt*—But the Commissioners have not that power.

*Sir G. C. Lewis*—You assume, then, that the Commissioners have not as much power in this respect as the University and Town Council. That is a dangerous argument for your side.

*Mr Rolt* submitted it was not beneficial to any party that competition should be fostered between the University and the professional colleges. He hoped their Lordships would support the Commissioners, except where, in the admission of extra-mural teachers or examiners, and in the recognition of extra-mural lectures, or in fixing the conditions of graduation, the Commissioners had exceeded their powers.

*Mr Selwyn*, *Q.C.*, followed on the same side. After maintaining the inherent power of the University to give the degree of C.M., he appealed to the mention of that degree in the Medical Act as a thing then existing, or capable of existing, in connection with a University, as a further proof of its competency. On the authority of Dr Paget, he asserted that the University of Cambridge possessed and had exercised, on seven occasions between 1569 and 1616, the right of granting a license or degree in Surgery, and was now taking steps to revive the degree, of their inherent right to grant which they entertained no doubt. The Universities of Glasgow and Dublin also granted surgical licenses, as had been done by Salerno, Padua, and other Continental academies. A University had the power to divide a Faculty and increase the gradations of proficiency, as long as the divisions and gradations were of a known character. The Legislature had distinctly recognised Surgery as a branch of Medicine in one or more Acts; and Surgery formed an important part of the course of medical instruction in the University of Edinburgh. In dealing with the question of expediency, their Lordships must place themselves in the position of the Commissioners, whose decision they had to review. They must recollect that the question was not whether the University should issue licenses to practise—whether *per incuriam* or advisedly the Legislature had allowed the University to grant a medical degree which had hitherto entitled the holder to practise both in Medicine and Surgery. Their Lordships must recollect, too, that this University was one of the poorest, that it had no rich endowments, and that it depended almost entirely on the fees paid by the students. If these fees were diminished, if the students were placed at such a disadvantage in the University as to be tempted to leave it for the professional Colleges, then not only the medical school, but the whole University, would be injured in the most calamitous manner. The whole question was really whether the University did not give full and complete instruction in Surgery, and whether it were not to be allowed to bring its system into conformity with the Medical Act. He defended the sufficiency of the qualifications, and asserted that they were equal to those at Oxford and Cambridge. The examination of the University could bear comparison with that of the non-professional Colleges. When he stated that within the last year nearly 1000 candidates had received licenses from the Royal College of Physicians of Edinburgh, and that of these upwards of 350 were admitted after examination within a single fortnight, their Lordships might imagine what sort of an examination was imposed. The introduction of extra-mural teachers into the University

Examination Board was objectionable chiefly on the score of expense. If the infusion of any new element was required, it might be supplied by adding two or three Professors from some other University; and it would then become an interchange of courtesy between the Universities, and expense would be avoided.

*Mr Roundell Palmer, Q.C.*, replied for the petitioners. He protested against the idea that because the Medical Act made provision for registering a Master in Surgery, that degree was thereby recognised as actually existing; it was a prospective provision in case such a degree should afterwards be created. On the point of express power, he reminded their Lordships that the privileges of the Edinburgh University were co-extensive only with those of any other such institution in the realm.

*Sir G. C. Lewis*—That is, in Scotland.

*Mr R. Palmer*—Unquestionably the words occurred in a charter of James VI.; and it had never been shown that any other Scottish University possessed the power of giving this degree. Oxford and Cambridge granted licenses in Surgery, but these partook of the character of degrees in no respect; and even these licenses were founded on express authority—at least there was a well-known tradition of an old Act. He insisted that all the disabilities which those with the degree of M.D. now complained of existed before the Medical Act. Nearly all of the Doctors of Medicine were also licentiates either of the Edinburgh or Glasgow Colleges of Surgeons. Practically, therefore, things remained just as they were. The University still had the power of giving medical degrees, in which no other body could compete with it. The system under which the medical school of the University had flourished remained as it used to be. Mr Palmer also dwelt on the insufficiency of the qualifications for the new degrees, both preliminary and professional, and the illiberal restriction of extra-mural teaching. The Medical Act did not, for the first time, draw a distinction between Medicine and Surgery; but from the earliest time the distinction had existed.

This closed the case.

The *Lord Chancellor* thanked the bar for the able assistance they had given the Committee. Of course they were aware that, as a Committee of the Privy Council, they did not give a decision themselves; their duty was only to advise her Majesty what, in their opinion, was the course to be pursued.

This closed the proceedings.

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## KING'S AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND AND THE DEGREE OF M.D.

At a meeting of the Irish Branch of General Council of Medical Education and Registration, held on Saturday, 29th December 1860, present—Dr Apjohn in the chair—Dr Smith, Dr Leet, Dr Corrigan, Dr Porter; *inter alia* "Read,—the following letter:—

"King and Queen's College of Physicians in Ireland,
"Dublin, December 27, 1860.

"SIR,—I have the honour to enclose to you, for your information, the following Queries and Replies of the Right Hon. the Attorney-General for Ireland, as to the power of the King and Queen's College of Physicians to confer the Degree of Doctor of Medicine:—

"'*First Query.*—Whether the Licentiates, as such, of the King and Queen's College are entitled to the Degree and Title of Doctors in Medicine, and to use the abbreviation or initial letters M.D. after their names?

"'*Answer.*—I think the Licentiates and Fellows, as such, of the King and Queen's College of Physicians are entitled to the Degree and Title of Doctors in Medicine, and to use the letters M.D. after their names.

"'*First Query.*—Whether there exists any restriction or law to prevent the College using and adopting into their Testimonial, Diploma, or License, words such as those suggested, adjudging the candidates qualified to practise as Doctors in Medicine, or words of similar import?

" '*Answer.*—I think there is no restriction or law to prevent the College introducing into their Diploma or License words such as those suggested, or words of similar import.
" 'R. DEASY.
" 'Nov. 21, 1860.'

" I have the honour to be, Sir,
" Your obedient servant,
" W. MOORE, *Registrar.*

" To Wm. E. Steele, M.D.,
" Registrar, Branch Medical Council, Ireland."

Read,—The following letter :—

" 9, Donegal Square, West, Belfast,
" 8th December 1860.

" SIR,—I have the honour to request, through the Branch Medical Council, that my name may appear in the Medical Register with the additional title of 'M.D.;' as I am instructed by circular from the King and Queen's College of Physicians in Ireland, that 'the Licentiates of that College are entitled to the Degree and Title of Doctors in Medicine, and to use the letters M.D. after their names.'

" I have to notify my change of residence, also, and to request the alteration to be made in the Register for 1861, accordingly.

" I have the honour to be,
(Signed) " SAMUEL BROWNE,
" L. K. and Q. Coll. Phys., Ireland.

" W. E. Steele, M.D.,
Registrar, Branch Medical Council, Ireland."

Read,—Also the following Certificate :—

" This is to certify that Doctor Samuel Browne was admitted a Licentiate of this College on the 16th December 1859, and as such is entitled to have the additional qualification of Doctor of Medicine affixed to his name on the Medical Register.

By order,
(L.S.) (Signed) " WILLIAM MOORE, M.D.,
" Fellow and Registrar, King and Queen's
" College of Physicans in Ireland."

Dr Apjohn having vacated the chair, Dr Porter was moved thereto.

RESOLVED,—That it is the opinion of this Council that the higher degree of Doctor of Medicine should be inserted in the Medical Register after the name of Samuel Browne, of No. 9, Donegal Square, Belfast.

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## KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND.

The King and Queen's College of Physicians in Ireland having had before them the opinions of the Right Honourable the Attorney-General for Ireland, and of the Solicitor-General for England, that the Fellows and Licentiates of their College are entitled to the degree and title of Doctor of Medicine, and that they are authorized to certify to such purport, have, in accordance with such opinions, adopted into their Bye-laws the following form of diploma :—

" We, the President and Fellows of the King and Queen's College of Physicians in Ireland, having duly and deliberately examined *A. B.* in the principles and practice of Medicine, and in the accessory sciences, and having found him well versed therein, do, by these presents, grant to him license to practise in the Faculty of Physic, and do certify that he has obtained, and is hereby entitled to the degree, title, and qualification of Doctor of Medicine and Licentiate of said

College. In testimony whereof, we have hereunto subscribed our names and affixed our common seal, at the College Hall, in the city of Dublin, this day of 186

———— *President.*
———— *Vice-President.*
————
———— *Censors.*
————

————
———— *Fellows.*
————
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## ROYAL COLLEGE OF PHYSICIANS OF LONDON.

This College has now issued its regulations, admitting the general practitioner to its license. Students are admitted to examination after four years of professional studies, of which, however, only three require to have been passed at a medical school. The examination includes all the departments of professional study, except surgery. "Registered medical practitioners" are admitted by examination in medicine and midwifery only. The licentiates are allowed to dispense medicines to their own patients.

The regulations for the license of the Edinburgh College of Physicians require the student to have attended at a medical school during four winter and three summer sessions. The examination includes all the departments of study. Practitioners of five years' standing are admitted by examination in practice of medicine, materia medica, midwifery, and medical jurisprudence.

The regulations for the license of the Dublin College of Physicians require four years' attendance at a medical school. The examination includes all departments, except surgery. Practitioners of five years' standing are admitted by examination in materia medica, practice of medicine, medical jurisprudence, and midwifery.

## THE ASSOCIATION OF SCOTTISH MEDICAL PRACTITIONERS.

*To the Editor of the Edinburgh Medical Journal.*

*January* 18, 1861.

SIR,—The Association of Scottish Registered Medical Practitioners, which was organized last spring, is admitted to have fallen into a state of suspended animation. In order to its resuscitation, and to ensure a useful future existence, I would beg respectfully to suggest that it be converted into a "Scottish Registered Medical Practitioners' Protective and Benevolent Association," combining, as its new designation indicates, with those objects, to promote which it was originally started, a Widows' and Orphans' Fund, and a fund for aiding those of its members who, from disease, old age, etc., are rendered unfit for work, and require assistance. Why should we in Scotland be less careful of our unfortunate brethren, and of their widows and orphans, than our English or Irish fellow-practitioners? Assuredly not because we have less need, since the majority of us have to depend solely on our arduous labours for our means of subsistence; and when permanent disease or death overtakes us, we, or those dear to us, are often destitute indeed. Why should we be behind the clergy in this respect? Almost all denominations have their Ministers' Widows' Fund. I believe most of our Scottish brethren would join the Association in this new form, as there must be few who could not spare L.2 a-year, bringing to them the comfortable thought that, if Providence should spare them in health, they would never miss it, but that it was aiding in carrying a blessing to their less fortunate brethren, or their widows and orphans; and that, if disease or death should happen to them, they, or those depending on them, would have something to look to.

The Scottish Association must have some funds in the bank, as I have never heard of the half-guinea subscriptions having been spent in consulting counsel, in prosecuting intruders, in sending petitions to Parliament on medical questions, or in sending deputations to London to promote Scottish medical interests.

These funds, I have no doubt, will be satisfactorily accounted for. At the next annual meeting, with the sanction of the members, they may be usefully employed in resuscitating the dormant Association, and putting it into the shape now proposed. A bond of union would thus be formed, which would, I believe, do more good than any amount of legislation on our behalf, as I am of opinion that, if Scottish surgeons are to be elevated in social status, they must elevate themselves, and not trust to Acts of Parliament.—I am, etc.,

A Member of
Scottish Registered Medical Practitioners' Association.

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## PERIODICALS RECEIVED.

The following have been received regularly up to this time:—

American Medical Monthly. American Medico-Chirurgical Review. Zeitschrift der Aerzte zu Wien. Gazette des Hopitaux. Revue de Therapeutique Medico-Chirurgicale Boston Medical and Surgical Journal. Dublin Medical Press. Gazette Hebdomadaire. Journal de Medicine et de Chirurgie. Bulletin General de Therapeutique. American Journal of Medical Science. Dublin Quarterly Journal of Medical Science. Medical and Surgical Reporter. British American Journal. Gazette Medicale d'Orient. Journal für Kinderkrankheiten Nederlandsch Tijdschrift voor Geneeskunde. Gazette Medicale de Paris. British and Foreign Medico - Chirurgical Review. Medical Critic and Journal of Psychology. Journal de la Physiologie de l'Homme et des Animaux. Glasgow Medical Journal. Gazetta Medica do Porto. American Medical Times.

The following Journals are received irregularly, and the Editor would feel obliged if publishers would see that in future no delays occur *in their transmission*:—

L'Union Medicale (*none since August* 25). The Indian Lancet. Dublin Hospital Gazette. Würzburger Medicinische Zeitschrift. Gazetta Medica de Lisboa (*none since June*). Norsk Magazin for Lægevidenskaben. The Future. Revue Hydrologie Medicale. Indian Annals of Medical Science. The Atlantes. Annales des Maladies Chronique. Henke's Zeitschrift für Stadsazneikunde. Henle's Zeitschrift für Rationelle Medicin (*none since Pt.* 3 *of vol.* 8). Bombay Gazette. Bombay Times and Standard. Canstatt's Jahresbericht. American Journal of Insanity. Bibliothek für Læger. Archiv. Natur und Heilkunde. San Francisco Medical Press, etc., etc.

## PUBLICATIONS RECEIVED.

Aberdeen Medico-Chirurgical Society—Annual Report for 1860. Aberdeen, 1860.

Barwell—A Treatise on Diseases of the Joints. By Richard Barwell, F.R.C.S., etc. London, 1860.

Beale—Archives of Medicine,—No. 6.—Edited by Lionel S. Beale, M.B., F.R.S. London, 1860.

Braithwaite's Retrospect of Medicine—Vol. 42.—July to December 1860. London, 1860.

Bryant—Clinical Surgery. Part II. By Thomas Bryant, F.R.C.S., etc. London, 1861.

Flower—Diagrams of the Nerves of the Human Body. By Mr H. Flower, F.R.C.S. London, 1861.

Fourth Report of the Commissioners of Her Majesty's Customs on the Customs. London, 1860.

Goodday—The Successful Treatment of Influenza, Sore Throat, etc., etc. By H. Goodday, M.R.C.S., etc. London, 1861.

Holmes—A System of Surgery by Various Authors. Edited by T. Holmes, M.A. Cantab. London, 1860.

Hughes—On Diseases and Deformities of the Spine, Chest, and Limbs. By Richard Hughes, M.R.C.S., etc., etc. London, 1861.

Inman—Foundation for a New Theory and Practice of Medicine. *Second Edition.* By Thomas Inman, M.D. Lond. London, 1861.

London Medical Practice; its Sins and Shortcomings. By a Physician. London, 1860.

Lund—The Art of Medicine; its Objects and its Duties. By Edward Lund. London, 1860.

Meadows—On the Admission of Air into Serous Cavities. By Alfred Meadows, M.D. Lond., M.R.C.P., etc. London, 1860.

Ranking's Half-Yearly Abstract—Vol. 32, July to December 1860. London, 1861.

Strachan—Nature in the Cure of Disease.—A Lecture. By John M. Strachan, M.D., Dollar. Edinburgh, 1861.

The London and Provincial Medical Directory, and General Medical Register, 1861. London, 1861.

Ulrich—De la Chorse et de sou Traitement au moyeu de la Gymnastique Scientifique. Par Dr A. Sigfried Ulrich. Anvers, 1860.

Wallace—On some of the Causes of the High Rate of Mortality in Greenock. By James Wallace, A.M., M.D. Greenock, 1860.

# Part First.

## ORIGINAL COMMUNICATIONS.

### Article I.—*Obituary Notice of Professor Anders A. Retzius, Foreign Corresponding Member of the Medico-Chirurgical Society of Edinburgh.* By Charles Wilson, M.D., F.R.C.P.E.

(*Read before a Meeting of the Medico-Chirurgical Society.*)

Even had Professor Retzius no further claim upon the notice of this Society than such as attached to his high reputation as an original and zealous cultivator of anatomical science, taken in conjunction with the fact that the genial nature of the man himself was more or less closely known, through personal acquaintance, to many of our members, a passing tribute to his memory would have been no undue testimony of our participation in the feelings of regret, which, on the occasion of the intelligence of his death, have been widely expressed elsewhere. But when we add to this, that, as one of the Foreign Corresponding Members of our Society, and as an able contributor to its proceedings, his relation to us was of a more than usually intimate description, it seems as if there would be a failure of respect toward ourselves if we did not complete the act of honour we directed towards him while living, by now testifying our esteem for his memory. With this view, it may be permitted to me to lay before the Society a few brief details of his life of honourable and useful labour.

Anders Adolf Retzius was born in 1796 at the University town of Lund, in Sweden, where his father, the author, among other productions, of an esteemed work on the Fauna of Sweden, occupied the chairs of Natural History and Chemistry. Anders Retzius, having completed the ordinary course of study, partly at Copenhagen, but chiefly at the school of his native town, graduated at the latter in 1819, when in his twenty-fourth year: the subject selected by him for his thesis, which was in relation to the structure of the chondropterygious fishes, and especially of the Shark and Ray genera, demonstrating already his inclination towards those investigations, the pursuit of which gave distinction to his riper years; and the taste for which he had doubtless imbibed through the example of his father, as well as improved under the guidance of Professor Florman, his instructor in Anatomy. He acquired also, at this time, the diploma of Master of Surgery from the Carolinian, or Medico-Chirurgical Institute of Stockholm; entering subsequently into the military service of his country, in which he remained for about four years as surgeon of a regiment of hussars. From this position, he was called to the somewhat more congenial charge, having regard to the leading direction of his studies, of the Professorship of Comparative Anatomy in the Veterinary School of Stockholm, the duties of which office he performed with so high an appreciation of his efficiency, that he had also shortly afterwards confided to him the Chair of Human Anatomy and Physiology at the Carolinian Institute. Holding both of these charges conjunctly till the year 1830, his services were then restricted to the Carolinian Institute exclusively; and in no long period he was placed at the head of this establishment as its Rector. This new honour was not incompatible with his continuing his functions as teacher of Anatomy, a position of influence and usefulness which he held, with the greatest public advantage, up to the time of his death. The Royal Academy of Sciences of Stockholm, of which he had been long a member, in 1858 elected him as its President; and many foreign Societies, moved, like ourselves in 1857, by the consideration of his eminent qualities, included him among the ranks of their Honorary or Corresponding Fellows. The same motive procured for him what may appear to be the lesser honour of the order of the Lion of the Netherlands, conferred upon him by the King.

He was still in the full activity of his career, and in this enjoyment of universal estimation, when, on the 9th of April last, he was seized with what appeared to be an attack of articular rheumatism, sharply manifested, yet without any symptoms at the commencement to awaken alarm as to the result. On the 12th, indications of endocarditis were remarked, accompanied by irregular and somewhat intermittent pulse. A few days later, an enormous tympanitic distension of the abdomen began to develop itself, with profuse perspirations, and rapid sinking of the strength; and on the 18th of the same month he expired, after an illness of nine days. Two days after his death, the Society of Swedish Physicians, of which he had been for upwards of forty years a zealous and leading member, assembled for the special purpose of expressing their sorrow at the common bereavement, when it was determined that the Society should take part, as a public body, in the ceremony of the interment, as well as continue in mourning afterwards till the termination of the month. Meanwhile, a letter of condolence was directed to be addressed, on the part of the Society, to the surviving relatives; and Professor Santesson, who, with Professor Malmsten, had given an account of his illness, was charged with the duty of preparing a more public expression of the Society's sense of the gratitude due to their late colleague, and of their feeling of the extent of their loss. From the report of a *post-mortem* examination, which had been made by Professor von Düben, it appeared that the immediate cause of the fatal result had been a volvulus of the small intestine, at its junction with the cœcum, caused by a band, or membranous formation, proceeding from the former. This morbid condition, however, had been accompanied by no active inflammation, either at the contorted part or in its vicinity; so that death, it was surmised, had been consequent upon a paralysed state of the intestine, the effect of the obstruction, which had re-acted upon the internal organs, and been propagated through the sympathetic ganglia to the heart. A more minute account of what appeared to be thus, under its merely pathological aspects, a remarkable case of disease and of mode of fatal termination, was promised by Professor Santesson at a future meeting of the Society; but the details of neither this, nor of the public address, have yet reached me. Professor Retzius had attained his sixty-fourth year. He has left a widow, and two children; and of these, a son and a daughter, the former is now a diligent student of Natural History at Lund.

So warm and general a tribute of affection and regret as has followed the death of Professor Retzius, could only have been deserved or earned by one who had distinguished himself, during life, even more by his personal qualities than by his scientific labours or attainments. And it was in this respect, indeed, that his life was eminently signalized. Accustomed to take frequent excursions into other countries, he had brought himself into personal contact with many of the most conspicuous of the scientific men of Europe; and with these his attractive deportment, as remarkable for its simplicity and singleness of purpose as for its gentle kindliness, usually raised him at once from the merely casual acquaintance, whose reputation in science gave him a ready introduction at the time, to the cherished friend the remembrance of whose many excellences was not afterwards either easily or willingly abandoned. Thus he became engaged in an extensive correspondence with the most esteemed *savans* of both the old and the new Continents; the vigour of which his mental activity, along with the cordiality of his disposition, rarely allowed to languish. To confer a service seemed to him a work of so unmingled a pleasure, that the idea of annoyance or labour was never allowed to intervene; and the treasures of what he knew himself were alike as ready to be poured out when demanded, as, with still greater disinterestedness, he was ever prompt to point to merit in others, where he could obtain for it the distinction of which he judged it worthy. With the scientific men of his own country, many of whom had only ceased to be his pupils to take rank as his friends, his relations were of a still closer description. It is but to confirm my own knowledge of him, to learn from a letter addressed by his colleague, Professor Sundevall, to Professor Van der Hoeven of Leyden, that it cost him nothing to traverse, right and left, the whole of Stockholm, in order to render any one an assistance. As a lecturer, he was remarkable for the extent of his acquirements, and for the clear and animated style through which he enchained the attention of his hearers. He was never engaged in private practice.

My immediate acquaintance with Professor Retzius commenced only within about the last six years; and, in as far as our first personal intercourse was concerned, that may be said to have been of little more than a few days' duration. But the discovery, on his part, that I had been accustomed to take an interest in the language and medical literature of the Scandinavian kingdoms, seemed to draw him towards me at once; for so warm was his spirit of patriotism, that nothing animated or gratified him more than to encounter anywhere however humble a recognition of the intellectual merits of his countrymen, from among whom it was not sufficient for him that only a few conspicuous names, though these of very high distinction, had recently become familiar to the general public beyond his own country. Thus our short personal intimacy led to a frequent correspondence by letter, and to the transmission by him of many books and pamphlets, sometimes the productions of his own pen, but more frequently of one or other of his colleagues in Sweden; a notice of which, by any friendly critic in the Journals here, was an unfailing source of gratification to him. And certainly, I believe this gratification was even more, when praise was bestowed on some young aspirant in whose success he felt an interest, than where merely a fresh tribute was offered to his own, or to any other well-established reputation; for never, apparently, had rising merit a warmer or more unselfish patron. Nor was the criticism of any publication, thus forwarded by him, ever either an unsafe or a disagreeable office; for his own rectitude of discrimination never allowed him to invite attention to any contribution to our science, the intrinsic value of which did not qualify it to sustain his recommendation. Hence, it must have become a matter of real regret to his correspondents, when, as may have too frequently happened, circumstances prevented any work from receiving the consideration it deserved; owing, perhaps, to his zeal having sometimes made him not unwilling to over-task the capacity of others, for he himself seemed to acknowledge no difficulties, where, to use his own expression, he could claim attention in the name of science and justice. In his letters, this lively interest for matters of scientific progress was frequently interspersed with allusions to the great political questions of the day, in which all his bias was evidently with this country; nor can it be a matter of indifference that, with one of his so enlarged philanthropy and benevolence, his views of international polity should have so habitually accorded with those avouched here.

In April, 1857, in speaking of the return of spring, and of the ports being then newly opened after the ice of winter, he writes to me that in the preceding October he had completed his sixtieth year; and that now, therefore, he began to reckon years, months, weeks and days more closely than in his earlier life. "Friends," he adds, "both young and old, disappear alike from their earthly career, and we are taught, more and more clearly, how much a duty it is to hold ourselves prepared for the hour when our Lord shall say: 'Now it is thy turn.' I cannot feel too glad or thankful that I have completed this winter's somewhat severe duties in the Anatomy Hall, with about sixty young dissectors daily, besides my public lectures." In the October of 1858, he again writes to me, that he had then passed beyond his sixty-second year, and felt the effects of age creeping upon him: yet it is to add, with his accustomed kindly enthusiasm, that he had now lectured in the Institute since 1824, and found still his greatest pleasure in teaching youth, and in directing the dissections. In the same letter he mentions to me, that a recent residence at Gottenburgh had supplied him with an interesting and extensive opportunity for the study of the marine fauna, which, as it had been one of his earliest, remained still with him one of his favourite fields of investigation. It is on one thus on the watch, and ever occupying his life with earnest duty, fulfilled in the utmost singleness of spirit, that, a year and a half later, the summons has at last fallen. He retained his consciousness to the last.

Professor Retzius has not contributed any individual work of magnitude to those departments of science which he cultivated so assiduously; but his separate memoirs and monographs have been very numerous. From among these may be mentioned his Observations on the connection between the anterior as well as the posterior roots of the spinal nerves and the great sympathetic, published in 1832; a paper on the Intimate structure of the lungs of Birds, with another on the Auricular septum of the heart, and the tubercle of Lower, which appeared in 1835; on the Mechanism of the semilunar valves, appearing in 1840; on the Transverse processes of the dorsal and lumbar vertebræ, in man and various animals, in 1848; on the Microscopic anatomy of the liver, in 1849; on Abnormities in the pyloric orifice, in 1854; and on the Antrum pylori, in 1855. It was in 1857, on the occasion of his being elected a Foreign Corresponding Member of our Society, that he contributed to our Proceedings his paper, written by himself in English, on the Proper design of the semilunar lines of Douglas, accompanying it by several illustrative drawings. In forwarding to me this little treatise, he remarks, with his usual spirit of justice, of our countryman, Douglas, as of one whose merits have been undeservedly forgotten, and points out that the lines bearing his name had been misunderstood or overlooked by nearly all anatomists for upwards of a century. This paper afterwards appeared in the *Edinburgh Medical Journal;* and he wrote to me subsequently in terms of gratification at the manner in which it had been produced in that widely known representative of the Scottish Medical Schools. For a considerable period, Professor Retzius devoted much attention to ethnographical inquiries; and starting from an examination of the skulls of the early inhabitants of Sweden, as found in their ancient places of burial, he established here the now generally recognised distinctions between the dolichocephalic and brachycephalic races. On this topic he published a number of dissertations, the first of which appeared in 1842, and, I believe, the latest in 1857; of which last, presenting a review of the present condition of ethnological science, I was favoured by him with a copy, enriched by many manuscript corrections and annotations from his own hand. At the last meeting of the Association of Scandinavian Naturalists, he presided over the section for Ethnology. His various treatises have occasionally formed part of the Transactions of the scientific bodies, or have been published in the periodicals, of his own country, or in *Müller's Archiv*, *Froriep's Notizen*, and others of Germany.

These few imperfect records do not, certainly, depict the career of one, who, by his own discoveries, could form any pretensions to having created an epoch in his chosen department of scientific investigation: nor do they even show that we can undeniably assign to him the possibly not inferior merit, where discovery may be so often the result of a happy chance rather than of a laboriously devised induction, of having instituted a comprehensive survey of the whole discoveries, remote or recent, of others, with that appreciation of the facts accumulated, and of the prevalent methods of exposition, which was necessary for their full intelligence; and of having thus demonstrated what were the real limits of the ascertained and true in the biological science of his time. But great discoveries are rare; and to state that this brilliant, if often casually met or capriciously rewarded, description of success was denied to him, is not necessarily to aver that his mental characteristics were such as to have unfitted him for its achievement. As to what he accomplished in the way of that study and generalization of the entire scope of a science, which, if it may proceed upon a less keen intuition, demands a wider knowledge and a not less penetrating sagacity than belongs, at least essentially, to the discoverer, he appears to have reserved this for that course of oral tuition to which he applied himself so successfully. The world has obtained, therefore, no published testimony of the value of the results of so much enlightened labour and experience; such as it might have hoped from him in the form of a general treatise, whether developing a wholly new system, or merely purifying the materials, strengthening the foundations, and better ordering and consolidating the parts of another already in existence.

But if the great discoverer or arbiter in science have his rare place among us, the good man has his sphere of duty constantly and everywhere; and no sterling claim of civilisation or of humanity can suffer in the hands of those who, like Anders Retzius, are naturally endowed with the finest union of disinterestedness and philanthropy, tutored by discretion. In how far he succeeded in thus securing the confidence, with the esteem and gratitude, of his countrymen, is best proved, not only by the way in which they lament his loss, but by the difficulty, universally acknowledged among them, of filling up his charge; evidence of which has reached me within these few weeks from one of his more distinguished colleagues and oldest friends, who informs me that, confessedly on this score, his place then still remained only provisionally supplied.

Though I am aware that memorials, such as I have now presented, do not usually form part of the proceedings of our Society, they are common in similar institutions elsewhere; nor am I without trust that the character which I have so faintly attempted to portray will be held as justifying me in this instance, or that the Society will withhold interest from what I have endeavoured to render, however inadequately, a just tribute to the memory of one whom it has itself been pleased to honour, and whose worth reflects that honour back.

EDINBURGH, 22*d December*, 1860.

## ARTICLE II.—*Case of Perforation of the Stomach occurring under unusual Circumstances.* By BENJAMIN BELL, F.R.C.S.E.

(*Read before the Medico-Chirurgical Society, Edinburgh, 6th Feb.* 1861.)

I WAS sent for hurriedly, on November 30th, 1860, to see a young gentleman betwixt sixteen and seventeen, in a large educational establishment not far from town. He was tall for his years, and well-formed, but rather slender than otherwise. At two o'clock I found him in bed, with a basin at his side, into which he was vomiting, every few minutes, quantities of a dark brown fluid which resembled fæces in appearance, but had no feculent odour. It reminded me of what we sometimes see in cases of ileus and strangulated hernia. He said that he felt no sickness or nausea, but could not help vomiting from the quantity of wind which was collecting incessantly in his stomach. He had, at intervals, severe paroxysms of pain. Pressure with the hand did not seem to increase the uneasiness in the abdomen, which I found to be tympanitic and literally as tense as a drum. The expression of his countenance was very unfavourable, but not easily described; his pulse feeble; his hands cold and livid. I took a very serious view of the case, and was speedily impressed with the conviction that a fatal termination was inevitable. The only treatment which seemed admissible, was to endeavour to allay the vomiting and sustain his fast ebbing strength, while an attempt was made to moderate the extraordinary distension of the belly by means of a large injection. He accordingly got, several times, a little brandy and water with laudanum. He swallowed the mixture easily; but it came up again almost immediately. A small dose of medicinal naphtha seemed afterwards to afford temporary benefit, as the vomiting ceased for about half an hour. The enema brought away a small quantity of fæces very different from the matter vomited so abundantly, and of a decided feculent smell. But, contrary to my hope, no flatulence was discharged, and no relief followed the operation, and I regretted that an œsophageal tube was not at hand which might have been introduced still farther into the canal. It is worthy of notice that he insisted upon getting out of bed after the injection, and sitting on the night-chair, and that he returned to bed again, with little or no assistance. The remainder of this sad history is soon told. The vomiting, which had ceased for a time, commenced anew, and the distension of the abdomen, already so remarkable, continued to increase, so that Dr Begbie, senior, who came at my request about four o'clock, remarked that he had never seen the same amount of it in any previous case. The parietes of the whole abdomen appeared to be stretched to their utmost limits, and the poor young man called out, several times, that he was going to burst. During Dr Begbie's visit, the fluid brought up from the stomach assumed, for the first time, a bloody appearance, but the quantity was small; and after that, the vomiting ceased. At this period, a little emphysema was detected in the right groin, among the loose cellular tissue near the femoral ring. The progress towards death now became very rapid. The diaphragm seemed to have its action interfered with; the chest was encroached upon; the countenance become dusky, and a troublesome cough supervened; he complained that his feet and legs were sleeping, and then, in a few minutes more, that he had lost all feeling in both limbs as high as the pelvis. Retaining his consciousness to the very last, he died, almost suddenly, a few minutes before five.

I have refrained from mentioning any particulars which had occurred previously to my visit, so as not to interrupt the narrative of what I saw. I shall now endeavour to give a connected account of all the ascertained facts which seem to bear upon the case. These have been inquired into and sifted with care, both during the patient's short illness and subsequently, with the light thrown upon it by the *post-mortem* examination of his body.

*Previous History.*—It would appear, from the testimony of an intelligent relative with whom he lived for about six months in the autumn and winter of 1854, that at that time small vesicles were continually making their appearance and discharging matter, both on his lips and at the other extremity of the alimentary canal; that eventually his general health became seriously affected; and that, after a blister had been applied to his stomach, an immediate and beneficial effect was produced, for the watery vesicles ceased to appear, and he was seemingly restored to perfect health. The same gentleman further mentions, that when again paying him a visit, last September, he used to complain of pain in the region of his stomach after playing at cricket with some youths who, like himself, were at home for the school vacation. In connection with these statements, I have ascertained from his companions, that latterly he was disinclined for violent exercises, saying more than once, that he would not expose himself to the mêlé of a foot-ball match for a thousand pounds, having a consciousness, it would almost appear, of some inward weakness or infirmity. But he never made any complaint of illness, and performed all his school duties in a very creditable manner. At breakfast, the day before his death, he remarked to the boy sitting next him, that he had a pain in his belly. This, however, did not prevent him from starting, shortly afterwards, with his companions upon an excursion to Roslin. Nearly the whole school and most of the masters were of the party. It was professedly one of those long and exciting runs across the fields, familiar to the readers of *Tom Brown's School Days;* but, as far as I can learn, my young friend joined in it only to a certain extent, and kept principally upon the public road. One of his school-fellows was with him all the time, both going and returning home, and several other boys observed him during the course of the day; so that all his proceedings appear to have been satisfactorily ascertained. It would appear, that on his way to Roslin he partook rather freely of raw turnips, and drank water more than once, as he complained of being thirsty. Arriving at Roslin, he was observed to take his stockings off, dry them at the inn-fire, put them on again, and then warm his feet. He had some small beer before dinner. He appeared to dine rather heartily upon roast beef and potatoes, and afterwards had a little more of the beer. Soon after dinner the party commenced their walk homewards. About half a mile on this side of Roslin, he became suddenly "done up," as a companion expressed it, and declared that he could proceed no farther. Some of his friends offered to carry him, but he would not consent to it, and, after resting a little, resumed his walk. It was a slow and fatiguing process, and the poor fellow lay down on the road-side and rested every few hundred yards. At last, when about a mile from home, he allowed himself to be carried on the back of a companion. When he arrived he had an exhausted look, and shivered a good deal, but did not complain particularly of pain in his belly. After having his feet bathed, he went to bed and had some hot brandy and water. He passed a restless night, but slept a little. Retching came on during the night and recurred at intervals, the matter ejected being a colourless fluid in small quantities. About three o'clock, he rose and went into a neighbouring room, where he got a draught of cold water, and then returned to bed. In the morning, as the retching continued, and he complained of pain in the belly, some camphorated tincture of opium was administered, followed by a small dose of castor-oil, and the abdomen was rubbed with an anodyne liniment. About nine o'clock, the matter ejected from the stomach changed its character, and became the dark brown fluid which I afterwards saw. Still, he declared that he was better, and spoke as if he was treated with unreasonable care in being kept in bed beyond the usual hour. Up to this time no alarm was taken; but he did not improve, and betwixt eleven and twelve the belly began to swell in a very remarkable manner, with a great increase of his sufferings. I was then sent for, but owing to unavoidable circumstances, did not see him until about two. I have already described the condition in which I found the patient, and detailed all the material circumstances of the concluding scene.

*Inspection* twenty-two hours after death. Present, Dr Begbie, Dr J. Warburton Begbie, Dr Anderson, and myself.—We noticed unusual lividity of the body, particularly of the countenance, with coloured streaks over the abdominal parietes, indicating incipient decomposition, and the cellular tissue of the neck was swollen with emphysema. Dr Anderson conducted the examination.

Upon opening the peritoneal cavity, a large quantity of gas escaped, although the abdominal tension, so remarkable during life, was now less conspicuous. The small intestines were seen moderately distended, of a light rosy hue, but perfectly smooth, and free from inflammatory effusion on their surface. Scattered over the exposed convolutions were numerous small patches of feculent-like matter; and upon further investigation, a large quantity of the same dark-coloured fluid which he had vomited was found in the cavity of the pelvis and the posterior parts of the abdomen. No perforation could be discovered, after very careful examination of the whole intestinal canal; but two round openings, equalling in dimensions half-a-crown, were seen about the middle of the posterior aspect of the stomach. The viscus contained a large mass of dark-coloured matter, apparently flesh, mixed with vegetable fibres in process of digestion, and the mucous membrane was highly congested, and generally of a dark red colour. Dr Warburton Begbie and Dr Anderson remarked that the fluids of the abdomen were peculiarly irritating to their hands. A considerable portion of the anterior surface of the liver, with defined margins, had a yellow hue, as if it had been acted upon chemically. There was extensive emphysema in the cellular tissue surrounding the viscera of the abdomen; and the same was observable in the chest,—both lungs, in front, exhibiting very marked interlobular emphysema. The heart was empty and firmly contracted.

Considering that the case presented some peculiar features, both in its history and the appearances observed after death, we submitted the stomach with some of its contents, and a portion of the liver, to Dr Littlejohn, lecturer on medical jurisprudence, for a more leisurely and accurate examination.

The following is Dr Littlejohn's report:—

"The *mucous* membrane of the posterior wall of the stomach towards the pylorus presented a dark mottled appearance, of a deep chocolate colour, which in some places approached to black. In this part of the stomach, and midway between the smaller and larger curvatures, was a rent[1] (involving all the coats) two inches long and pretty regular in shape. The edges were distinctly softened, and around the margin the mucous coat was here and there removed, exposing the muscular tissue. This portion of the stomach was emphysematous, and the bullæ of air could be forced in various directions below the mucous membrane.

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[1] The two openings had become one in handling the stomach.

"Towards the *cardia* the mucous membrane was more natural in appearance, though a few patches of dark mottling existed.

"To the touch the mucous membrane covering the *pyloric* half of the stomach was evidently softened, while towards the *cardia* it was apparently of normal consistence.

"The *peritoneal* surface of the stomach was also discoloured over the *pyloric* half, and bullæ of air were plainly visible beneath it. Externally, the peritoneum around the rent presented a well-defined margin.

"The stomach had contained several ounces of solid material, consisting of divided portions of animal and vegetable food. Both the stomach and its contents had a strong fæcal odour; and on stirring the mass, portions of a dark-coloured substance adhered to the finger, which presented all the appearance of bilious fæcal matter.

"The stomach and contents were of *acid* reaction; and the washings of the stomach with distilled water afforded conclusive evidence that the acidity depended on the presence of hydrochloric acid in small quantity.

"No trace of oxalic acid, nor of any of the mineral poisons, could be detected.

"A small aperture (the size of a sixpence) was made between the rent and the pylorus during the examination of the stomach."

*Remarks.*—It is probable, I think, from a review of the whole case, that this youth had been affected with chronic disease of the stomach for some weeks at least before his fatal illness. We know that such affections are often very insidious in their progress, not being invariably accompanied by such well-marked symptoms as the *post-mortem* appearances might seem to warrant. He was not altogether well on the morning of the excursion; and the proceedings of that day, now that the probable state of his health is known, were very unfavourable to one in his circumstances. The exertion of walking and partly running five or six miles; the raw turnips which he ate; the successive drinks of cold water when heated; the beer; the walk homewards soon after dinner,—were all more or less calculated to prove hurtful to one who, we have reason to think, was affected with chronic inflammation, or even ulceration of the stomach. It is *possible* that perforation, to a limited extent, took place at the time when he so suddenly felt weak and "done up," half a mile on this side of Roslin; but I am inclined to believe that it was delayed until the time his symptoms became all at once greatly and alarmingly aggravated with *tympanites*, during the forenoon of the following day. The two openings in the stomach were so large, and they involved all the coats so completely, that I am disposed to regard them as in a great measure the result of chemical action occurring after death. The circumstances, be it observed, were most favourable for such an occurrence. Digestion was in progress, because a large quantity of imperfectly dissolved food was discovered in the stomach; the lining membrane, as we have seen, was, in all probability, the seat of disease, and on that account less capable of resisting chemical action than if it had been healthy; and, in point of fact, the fluid found in the stomach and effused into the peritoneal sac, contained, according to Dr Littlejohn, a large quantity of free gastric juice. That chemical solution of the coats of the stomach is not unlikely to occur under this peculiar combination of circumstances, may be gathered, I think, from the able and elaborate researches of a respected member of this Society, Dr John Gairdner, which were published many years ago in the first and second volumes of our printed Transactions. The intensely congested condition of the lining membrane in the case now detailed, does not militate against this mode of explaining the large perforated openings; because the process of digestion was evidently going on, and we know that it necessarily implies an abundant flow of blood towards the vessels of the stomach.

The emphysema, a remarkable feature of the case, was probably caused by the violent retching and vomiting, which continued almost incessantly for several hours,—the peritoneal sac, as I have already mentioned, being at the same time distended to its utmost capacity with air or gas from the openings in the stomach. I imagine that this tense condition of the abdomen, by upward pressure on the diaphragm, would favour the production of emphysema from rupture of air-cells when ordinary retching, by itself, might fail to do so.

## ARTICLE III.—*Two Cases of Tumour at the Base of the Brain, with remarkably contrasted Symptoms.* By W. T. GAIRDNER, M.D., and D. R. HALDANE, M.D.

(*Communicated to the Medico-Chirurgical Society of Edinburgh*, *Dec.* 5, 1860.)

THE interest of each of the following cases is so much increased by its association with the other, that the publication of them together has been deemed advisable. In the one case, a tumour growing out of, and very much encroaching upon, the pons varolii on one side was the cause of a series of well-marked paralytic lesions of several of the cerebral nerves, which were more or less structurally involved in the tumour. In the other case, though the apparent position of the tumour in reference to the base of the brain was nearly similar, the well-defined paralytic symptoms were entirely wanting; which is so far explained by the physiological relations of the tumour being different, inasmuch as it originated not in the nervous matter, but in the membranes, and only secondarily produced pressure upon the cerebral substance, to the extent, however, of giving rise to manifest deformity of the parts with which it was in contact. That so large a morbid mass should have grown in such a situation without marked local paralysis, is, however, one of those facts which it would have been difficult to believe, in the absence of conclusive and detailed evidence.

CASE I.—*Tumour arising from the membranes of the brain, and producing pressure, with atrophy on the right side of the pons varolii and cerebellum. Symptoms exceedingly obscure. History of an injury. Gradual and slight obscuration of the intelligence. No local paralysis until late in the disease. Then, paraplegic and very slight hemiplegic symptoms, involuntary evacuation of urine, bedsores, dysphagia, and death by asthenia, with general failure of functions of nervous system.*

Alexander N., quarryman, æt. 33, was first introduced to Dr W. T. Gairdner, by Mr Craig of Ratho, and Dr Watson, now of Midcalder. It appeared from the patient's statements, corroborated by these gentlemen, that some difficulty had been experienced in dealing with his case at the parochial board, a suspicion being entertained by some of the members that he was not a fitting subject for relief. The following letter, dated January 6, 1858, and brought by the patient from Dr Watson, is at once illustrative of the history of the case, and of the doubts that had arisen as to its true character:—

Alexander Niven, quarryman, fell, while working in the quarry, some nine years ago, a height of thirty feet at least. He struck the rock once or twice in his fall, but lighted *on his feet*. There was no wound of integument anywhere. He lay insensible for eight days (during which time his clothes were never taken off, and a piece of his *pipe* was lying in his mouth unnoticed): there was severe concussion.[1]

He has never enjoyed good health since. In 1850 he was sharply ill.

In 1853, he had severe neuralgic headache. During last year, symptoms have varied much.

At times he would be ravenously hungry, and yet find nothing he could digest; sometimes his thirst was great. He has had occasional turns of vomiting and diarrhœa, and copious urination.

No note has been kept of the state of his urine—(it was examined several times, and had there been anything amiss I would have remembered).

Mental depression is at times very great,—so much so, that suicide has often been dreaded by the friends: he is now irascible, and now sullen.

He has often fallen in the quarry while at work, and attributed it to tripping.

He often staggers like a drunken man, and cannot stoop to tie his shoes: has constant queer feelings in his head, pain shooting through it, so as to make him roar out.

He has complained most of the occipital region.

Lactic acid proved useful to him, in bringing his digestion into a better state than it had been before. Phosphoric acid has not been so beneficial as anticipated. Blisters have been applied to the nape of the neck (and an issue recommended), and the cold douche to the scalp.

It has been exceedingly difficult throughout to differentiate between the purely nervous or hypochondriacal symptoms, and those so circumstantially described by him, that might be accounted for by the primary injury alone.

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[1] His recollection of particular ailments (at first) is that he suffered in one hip, then in spine, and lastly in the head.

W. WATSON.

After carefully considering the preceding statements, and minutely examining into the state of the patient, Dr Gairdner arrived at the conclusion that the case was in all probability one of organic disease of the brain, and gave several certificates accordingly, to assist in procuring for him permanent relief from the parish. It must be confessed, however, that the case was regarded by all parties as one of extreme difficulty, the symptoms being almost purely subjective in character, and very variable in amount. There was at this time, in particular, nothing whatever that could be reasonably called paralysis; the intellect was little, if at all, affected, the articulation distinct, the gait perhaps a little uncertain and over-cautious, but in no respect showing decidedly morbid alteration. The history of an injury nine years before appeared only to perplex the diagnosis, as it could not be ascertained by the most minute inquiry that any distinctively cerebral symptoms to which his present state could be referred had followed the injury. It was quite possible, and even probable, that the story of the eight days' insensibility might have been exaggerated, consciously or unconsciously, and that the derangement of the general health might have been quite wrongly attributed to it as a cause.

It is unnecessary to detail the treatment, which was not productive of any benefit. Nearly fourteen months after the patient's first visit to Dr Gairdner, he applied to be admitted into the Infirmary. He was then manifestly suffering from a very peculiar form of impaired nervous function. There was a degree of diminution of the general sensibility, and also a certain imperfection of the voluntary movements, difficult to be described, and not amounting to distinct paralysis, but readily enough discovered upon careful and critical examination. The condition in question was repeatedly characterized, at the bedside and in the clinical lectures, as one of "slow telegraphy;" and this perhaps indicates, as well as any other expression, the kind of impaired nervous activity observed, and detailed in the following report on his admission:—

*February* 23, 1856.—Articulation is imperfect, slow, and confused, like that of a drunk man. Consonants are imperfectly sounded, and speech follows unusually slowly after questions asked. Sometimes he will take nearly half a minute to answer a very simple question. Is unable to walk; has not been observed otherwise than in a recumbent posture. Countenance passive, apathetic, utterly expressionless. Grasps firmly with both hands, and is not conscious of any difference in the strength.

No special paralysis or spasm of face observable.

Bowels (he says) are costive, not having been moved for five days. Takes his food well. Appears to have frequently passed his urine in bed, but not latterly. Expression of eyes is languid;

the lids, especially the left, are rather disposed to droop. Left pupil is larger than right, but only to a slight extent. Vision very decidedly imperfect. Seems to have great difficulty in counting considerable numbers, even of objects near him. Counts, moreover, with great slowness and indecision. Three fingers being held up, says there are two. Ascribes this imperfection of sight to his wife having "trampit on his taes and pulled his fingers." Says he often rose in the morning seeing quite well, and that his sight used to leave him in the daytime under the above-mentioned discipline.

Says his hearing is also indistinct; but it is not so palpably impaired as the sight. Quite unable to read even large print. Complains of no pain whatever, except in front of breast. No cough.

Action of heart rather weak. Sounds at apex feeble, but everywhere somewhat dull. Percussion over heart clear everywhere. Tongue protruded slowly, at first a little to the right; but on desiring him to protrude it in the middle, he does so very nearly. Surface of tongue clean. Papillæ rather red.

The following report on 1st April shows some important but still slight changes for the worse in the condition of the patient:—

Patient is observed to-day somewhat flushed; very slightly, however, and without any complaint having been indicated. On examination, extremities are rather cold. Pulse 80, and extremely weak (barely perceptible, but quite regular). The heart-sounds, in like manner, are excessively weak, at some points scarcely audible. No pain is indicated, except in abdomen; but while under examination, there is a tendency to shivering; and he says this has existed for two days. Pain (he says) is in his bowels, and is better. No tenderness, but the recti muscles of abdomen are singularly tense throughout their whole length. In speaking, the left side of mouth is decidedly relaxed as compared with the right; and the movements of left eyelid are sluggish, but without any marked droop or any difficulty of complete closure. Left pupil somewhat larger than right. Neither of them can be said to be contracted; left perhaps is a little dilated. Tongue clean, rather red, without enlarged papillæ.

Patient lies in a very apathetic state, and does not appear either to want anything or have any marked suffering, but is perfectly conscious and intelligent when spoken to. Answers, as formerly, are slow, and articulation imperfect; but no change in these respects. He says that his sight has been failing since admission. No double vision. No deafness. Being asked as to headache, he confesses he has sometimes frontal pain, apparently not severe nor much localized. Patient reported by nurse never to have had convulsions, nor to have passed involuntary excretions.

From this time the state of the patient was manifestly deteriorating, and the two concluding reports show a very considerable, though still by no means distinctly localized, loss of control over the voluntary movements. It will be observed that even on May 12th, only eleven days before the death of this patient, and when the solid parts must have been very much in the condition found after death, there was still no *well-defined* paralysis of any cerebral nerve, and the chief impairment of voluntary power was in the lower limbs. The automatic and organic nervous functions were, in fact, fully more disturbed than the strictly voluntary. The condition of the patient had many points of resemblance to the general paralysis of the insane; from which conditions, however, it was distinguished by the history, and by the total absence of the extravagant delusions so common in that affection, as well as by several minor peculiarities. The correctness of his mental impressions and the soundness of his judgment were indeed very surprising, considering the enfeebled state of his body, and the remarkably slow rate at which all impressions seemed to travel to the sensorium. In illustration, it may be mentioned that a small sum was to be drawn on his behalf, when required, from a friendly society; and he repeatedly expressed the greatest anxiety that it should not be drawn by his wife's relatives, who had the charge of some of his children. To satisfy him on this point, it was found necessary to send for his eldest son; and from all that passed on the occasion, it appeared that the disposal of his small means was directed by quite as much sagacity and carefulness as is usually shown by persons in his station in life.

*Examination, May 12th.*—For the last month or six weeks the condition of the patient has not varied materially. When left to himself, he is exceedingly apathetic; but when spoken to, can always be roused to distinct replies, and he has been led to perform various pieces of business in connection with his own affairs, apparently quite correctly. Not the slightest approach to delirium, either of the muttering or maniacal character. Discharges the urine always in bed, but the fæces never. He has never left his bed for many weeks. Amount of power of control over lower limbs not ascertained; but the nurse states he cannot stand when raised to stool. He grasps perfectly with both hands, and power seems equal; but all the finer regulated movements are performed with great difficulty, and some seem impossible. It is very difficult to define how much of this depends upon imperfect sight, and how much upon imperfect cerebral action. His condition appears dreamy and abstracted, like that of a person in deep reverie. He forgets very soon what is said to him, and all impressions seem faintly as well as slowly conducted. Drooping of left eyelid is, as before, occasionally observed. Can close both eyes quite well, and open them. Paralysis of left side of mouth distinct, when features are in action. When lying on his back there is occasional snorting respiration, but breathing does not appear seriously impeded. There is some difficulty in swallowing. This is referred by him to the neck, but not to any single spot, and is unaccompanied by pain. Nurse reports that feeding is extremely difficult, food often comes back, and he sometimes seems as if about to choke.

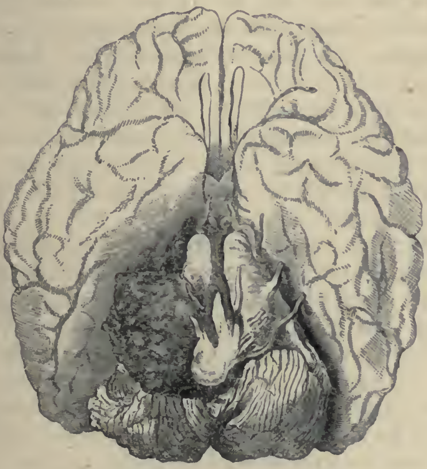
*May 23d.*—For the last day or two the patient has been gradually sinking. In consequence of his constantly passing the urine in bed, the skin has sloughed over left trochanter. Paralysis of the left side of the body has been observed; but there is such an impairment of all the functions of the nervous system, that no phenomena are now characteristic. Died at 5 P.M.

The body was examined in the Pathological Theatre of the Infirmary, and the following is an extract from Dr Haldane's report of the *post-mortem* appearances, which, in so far as the base of the brain is concerned, are well represented in the woodcut (Fig. 1).

*External appearances.*—There were bedsores over the sacrum. The body was moderately emaciated.

*Head.*—Membranes of the brain, as exposed to view on opening the head, normal; pacchionian bodies large; some flattening of the convolutions, and a moderate degree of congestion of the vessels of the pia mater. The grey matter of the convolutions had a pinkish appearance on section. The lateral ventricles were dilated, and contained from three to four ounces of transparent serum.

Fig. 1.



When the brain was removed, a tumour of a greyish colour, and of an irregularly oval form, about the size of a hen's egg, was found to grow from the base of the brain on the right side. It was attached to the right crus cerebri, and the right side of the pons, behind the crus. It had excavated (by pressure) the right side of the medulla oblongata, and the right lobe of the cerebellum, but was connected with them by pia mater only.

The nerves pressed on were the 5th (probably also the 4th), the 6th, 7th, 8th, and 9th (of Willis), all on the right side.

The organs of the thorax and abdomen were normal, with the exception of the right lung and pleura, which presented a very early stage of pleuro-pneumonia, apparently quite recent.

CASE II. *Fibro-plastic tumour growing from the left side of the* *pons varolii and medulla oblongata, giving rise to hemiplegia of the right side of the body, and to well-marked paralysis of the left side of the face.*

Robert M——, æt. 6 years and 7 months, was admitted into the Royal Infirmary of Edinburgh, under Dr Haldane's care, on the 29th of March 1859, being supposed by the medical attendant of the family to be suffering from hydrocephalus. The patient's mother, an intelligent woman, gave the following account of his illness. Until the present attack, her son had been a healthy and lively child. He had never had fits, and had passed favourably through all the ordinary diseases of childhood. About the middle of last January he fell while on his way home from school, and struck his head with some violence upon the ground; on arriving at home he was bleeding from a cut over the right frontal eminence. He complained of some pain in the head, but took his food as usual, and slept well that night. Next morning he still complained of headache, but was able to go to school. Nothing further is remembered of the next few days, except that he went to school regularly. A week after the accident there was persistent headache, and the child was dull and depressed. He was detained from school, and has kept the house from that time. It was next noticed that in taking food he began to use his left instead of his right hand. He appears about the same time to have begun to drag his right leg in walking, and to allow his head to fall over to the right side. He still took his food very well, and his bowels acted regularly. He slept well at night, but started occasionally. Since these symptoms were first noticed, the power in the right side of the body has gone on gradually diminishing, and his speech has become affected. During the last fortnight there has been much wheezing with the respiration, and a good deal of expectoration.

He has not vomited during the whole course of his illness; of late his bowels have been much constipated.

The mother stated that both she and her husband had always been strong and healthy, and that their two other children, aged respectively nine and eleven, had enjoyed uninterrupted good health.

On the day after admission into the Infirmary, he was found in the following condition:—He is a well-grown child for his age, but is a good deal emaciated. There is no mark over the frontal bone at the point where the injury is said to have been sustained, and there does not seem to be any tenderness on pressure. He generally sits up in bed, or remains in the semi-recumbent posture, with his head leaning a little forward in the mesial line, or slightly inclined to the right. When his head is raised, he cannot retain it in that position, but it falls backwards. This appears to give him pain, an anxious expression comes over his face, and he draws his head forwards, either by grasping his hair, or by taking hold of his nose. He has a dull, heavy expression; there is no squinting, and the motions of both eyes appear to be equal and regular. The left eye can be fully opened, but cannot be closed so completely or so firmly as natural; vision appears to be equal in the two eyes; both pupils are dilated, but equally so; they contract readily under the stimulus of light. There is complete loss of power of the right arm and leg; he cannot grasp with the right hand in the slightest degree; when asked to move the right arm, he lifts it up with the left hand. Sensation in the right side of the body is little impaired. There is paralysis of the left side of the face. In breathing, only the right ala nasi expands; when he coughs, cries, or tries to speak, there is marked twisting of the features to the right side. Sensation in the left side of the face, though not absent, is considerably impaired; but the left conjunctiva is almost completely insensible: when it is touched with the finger, the patient does not attempt to draw back. The reflex movements are also much diminished, irritation of the conjunctiva only producing slight depression of the upper eyelid, and very scanty lachrymation.

It cannot be determined whether he hears less perfectly with one ear than with the other.

When asked to show the tongue, he opens his mouth partially, but does not protrude the organ beyond the teeth; it appears, however, to have a tendency towards the left side. He swallows imperfectly; when he takes a little milk into his mouth, it appears to interfere with his breathing, and to produce cough, and is in great part ejected from the mouth and nostrils. A good deal of wheezing accompanies the respiration, and there is copious secretion of a tough, tenacious mucus, which is with difficulty got out of his mouth.

His intelligence appears to be unimpaired, but he cannot answer questions, having lost almost entirely the power of speech. His attempts at articulation are very imperfect; when asked if he has any pain, he makes a moaning sound, which his mother interprets as meaning, "I dinna know."

On the 3d of April it is noted that the left conjunctiva was less sensitive than on admission. Touching it did not produce the slightest evidence of sensation, and neither winking nor any other reflex phenomenon was produced. He was seen eating rice pudding: when asked if he liked it, he made a slight movement of the features which seemed to indicate assent; he put it into his mouth, but had great difficulty in swallowing it; he pushed it back in his mouth with the fingers of his left hand, apparently from inability to move it with his tongue; it accumulated in the cavity of the left cheek (owing, no doubt, to paralysis of the buccinator), and he had to press upon this part with his hand.

Two days later it is mentioned that the head lay distinctly over towards the right shoulder, but when asked to do so he could draw it, though slowly, over to the left. The rectus externus of the left eye was also found to be paralysed. There was a slight convergent squint, and he could not move the eye in the least outwards.

On the 7th of April it is noted that there was absolute hemiplegia of the right side of the body,—sensation, however, not appearing to be much impaired. There were no reflex movements of the upper extremity, but on pinching the toe reflex movements were produced.

On the 9th of April he began to suffer from spasmodic attacks, accompanied with loss of consciousness, flushing of the face, and marked drawing of the features to the right side. In the interval between the attacks, he was altogether duller and heavier than before.

From this time he became gradually weaker, and died on the 11th of April.[1]

The only treatment adopted consisted in the occasional administration of castor oil by the mouth or rectum, together with small doses of iodide of potassium. No counter-irritation or other active means was employed, as it did not seem likely that it would have done any good, but would only have been a source of suffering and discomfort.

From the time of the patient's admission into the hospital, little doubt was entertained as to the nature of the lesion. The prominent symptoms, it will be borne in mind, were hemiplegia of the *right* side of the body, and paralysis of motion and sensation on the *left* side of the face. It was therefore evident, that if the same cause accounted for both sets of symptoms (of which there was every probability), there must be a lesion affecting a central portion of the nervous system, and consequently producing hemiplegia in a crucial manner, while the paralysis of the face was to be accounted for by direct pressure upon peripheral portions of nerves within the cranium. Had the paralysis of the face been due to a central lesion, it would have been on the same side as the hemiplegia. It was accordingly concluded, that there was a lesion of the left side of the pons which produced pressure upon several of the cranial nerves.

From the well-marked character of the symptoms, a good idea could be formed of the situation and extent of the lesion. There was no symptom suggesting interference with the first four pairs of cranial nerves. From the youth and general condition of the patient, as well as from his loss of the power of speech, it was impossible to make out whether the sense of smell was affected, and it was even difficult to determine whether or not vision was impaired; but it was certain, from the absence of ptosis, and from the comparatively perfect state of the movements of the eye, that neither the third nor the fourth nerve was affected. The fifth nerve on the left side was evidently interfered with, as indicated by the insensibility of the conjunctiva, and by the partial loss of sensation on the left side of the face. As the case progressed, it became clear that the sixth nerve was involved. For, some days after admission, it was noted that there was a convergent squint, with impossibility of moving the eye outwards,—a condition indicative of paralysis of the rectus externus muscle. That the portio dura was implicated, was rendered manifest by the imperfect action of the orbicularis palpebrarum, and by the paralysis of the muscles of expression of the left side of the face. The condition of the two sides of the head, with regard to hearing, could not be made out. The difficulty of swallowing, and the peculiar condition of the respiration, rendered it probable that the eighth nerve was interfered with ; while paralysis of the tongue indicated an affection of the ninth nerve. It was therefore rendered in the highest degree probable, that we had to do with a lesion affecting the left side of the pons, and extending back to the medulla oblongata.

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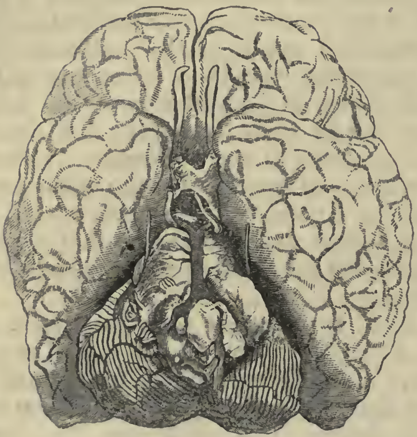
[1] A case, presenting numerous features of resemblance to the above, will be found recorded in the second volume of the translation of Professor Romberg's book on Diseases of the Nervous System, published by the Sydenham Society, at page 407.

As to the nature of the lesion, there might have been room for some difference of opinion. From the history of the case it might have been supposed that there had been some injury of the skull or membranes of the brain, and that a hæmorrhagic extravasation had taken place at the base of the brain. This supposition was, however, rendered improbable by the circumstance that there had been an interval of a week of good health between the reception of the injury and the occurrence of the first characteristic symptoms. An abscess of the left side of the pons might have accounted for some of the symptoms ; but this idea was not supported by the chronic character of the case, and by the length of time during which serious symptoms had existed. It therefore seemed probable that the disease was a tumour growing from the left side of the pons and medulla oblongata, extending as far forward as the fifth nerve, and reaching as far back as the ninth.

From the absence of other constitutional symptoms, and from the character of the family history, it seemed improbable that the tumour was of a tubercular character ; and the definite diagnosis accordingly was, a tumour of a simple nature, growing from the left side of the pons varolii and medulla oblongata.

The body was examined twenty-four hours after death, when the following appearances were found :—

On opening the head the surface of the brain appeared moderately congested ; there was some flattening of the convolutions. The lateral ventricles were somewhat dilated, containing about three ounces of clear serum ; the parts contained in the ventricles were natural. On removing the brain, a lobulated tumour was found growing from the left side of the lower surface of the pons varolii, and from the left side of the medulla oblongata. The largest lobe of the tumour, of the shape of a large almond, and measuring an inch and a quarter in length by three-quarters of an inch in breadth, was placed obliquely ; its apex reached to the basilar artery about the point of junction of the posterior with the two anterior thirds of the pons, and it extended backwards to the cerebellum ; it lay in a



depression in the left side of the pons (which was much compressed), on the crus cerebelli, and on the anterior part of the left lobe of the cerebellum. The remainder of the tumour, more irregular in form, consisting of several small lobules, grew from the back of the pons and from the upper part of the medulla oblongata. The medulla was somewhat twisted, the left side being pushed back, and the right side being tilted a little forwards. The pons was larger and broader than natural, as was also the medulla oblongata, evidently in consequence of a portion of the tumour occupying their interior.

The nerves on the right side of the base of the brain were not affected. On the left side the first, second, third, and fourth nerves were not interfered with. The fifth nerve was compressed between the tumour and the crus cerebelli, and was much flattened. The sixth nerve, at its origin, was concealed, lying between the tumour and the pons. The origins of the seventh and eighth nerves were at first concealed by the tumour; but when it was raised slightly, they were found to be compressed between it and the cerebellum. Some of the upper roots of the ninth nerve were compressed.

The tumour was of a greyish-white colour, and of moderately firm, somewhat elastic consistence. Examined microscopically, it was found to present the structure of a fibro-plastic growth, consisting of a basement of fine fibrous tissue, in which were embedded numerous small oval and rounded cells.

The lungs were dark-coloured and almost solid (from collapse) posteriorly; the bronchi were lined with tough tenacious mucus. There was no trace of tubercle in the lungs or in any part of the glandular system. The abdominal organs were quite healthy; two or three intus-susceptions of small intestine were found, which had no doubt been produced during the agony.

## ARTICLE IV.—*Notes upon Tracheotomy, with Cases; to which are added Two Cases of Hernia.* By A. M. EDWARDS, Esq., F.R.C.S.E.

WHILE it seems so easy for a teacher of surgery to lay down rules for the operations which are performed to avert impending suffocation, and while they seem so easy of application on the dead body, few surgical performances require more tact, or have been the subjects of such varied opinions and such voluminous writing. The very question of where the opening in the windpipe should be made, is answered very differently by many surgeons.

To take some illustrations of this: Mr Erichsen, in p. 763 of his *Science and Art of Surgery*, says, "On comparing tracheotomy, as ordinarily performed, with laryngotomy, I think there can be little doubt that the surgeon should give the preference, in all cases where it is practicable, to the latter operation;" and then proceeds to define these—"All those cases in which obstruction to respiration is dependent upon inflammatory effusions into the submucous cellular tissue, whether it be dependent upon idiopathic or erysipelatous laryngitis, or upon the irritation and inflammation excited by swallowing boiling water or the stronger acids, the swelling, for reasons, etc., etc., never extends below the true vocal cords." Then Mr Skey, in his *Operative Surgery*, p. 551, says, to tracheotomy below the thyroidean isthmus there are abundant objections; and he figures the dissected middle of a neck with a single large thyroid vein falling down straight as a plumb-line. "The exposure of the surface of the trachea *above* the thyroid isthmus has not these objections. *This* is the point that should be selected for the operation of tracheotomy." Professor Syme, on the other hand, says, "The most convenient situation, when accessible, seems to be immediately *below* the isthmus of the thyroid." So Mr Fergusson also seems to think. Allan Burns also, in p. 415, *Anatomy of Head and Neck*. There seems, however, to be a gradually increasing partiality for laryngotomy or laryngo-tracheotomy, if we are to judge from the numerous publications on the subject, and the ingenious devices for simplifying the operation. The very nature of the causes for which this operation is performed (laying aside those experimental ones for epilepsy, or for the relief of spasm in aortic aneurism) makes it desirable that the operation should be as speedy, and the instruments as simple, as possible. Now, though laryngotomy is so much written about, *is* it a common operation? So far as my experience goes, I should say that it is not often done intentionally, though I have frequently seen the cricoid cartilage cut by operators when performing tracheotomy, as they imagined, under the thyroid isthmus. For my own part, I have always selected the situation recommended by Mr Syme, and see no reason to change it, because, though undoubtedly tracheotomy, like every operation at the root of the neck, requires care, it seems to me well worth the additional trouble. Your tracheal opening is far from the disease, far from the sensitive mucous membrane of the larynx, and, so far as surgery goes, it is the utmost you can do for the patient; whereas, if you open the tube at its upper part or in the crico-thyroid membrane, he *may* be no better off after the operation than he was before.

In the University Museum there is a rich collection of morbid specimens of the respiratory apparatus; and the following especially answer this question:—

No. 2293.—Larynx and trachea of a female æt. 20. Laryngotomy had been performed, and relief was experienced from the operation "for *some months*." In this case the disease is seen to extend at least two inches below the ulcerated depression in which the laryngotomy tube rested.

No. 2287.—From a man æt. 20, who, when convalescent from fever, was seized with sore throat and superficial ulceration of the tonsils. Laryngotomy was performed, and was performed without relief in consequence of the disease extending below it. He survived the operation only half an hour.

There is also, however,

2292. Laryngotomy was performed on the patient from whom this was taken, twelve months before death.

In this collection there are several specimens of disease extending below the situations recommended for laryngotomy or laryngo-tracheotomy.

Indeed, in many cases it is difficult to determine exactly the condition of the windpipe of a person suffering from symptoms of suffocation. The surgeon is hastily summoned; he gets a few confused and hurried explanatory sentences to guide him; the patient is generally unable to give much information, or even to submit to examination; and, with all respect for the operators who advise us "to feel for the cricoid cartilage, and ink a line below it," I would say, that in many the neck is full and swollen, tense and puffy, and not very well adapted for the application of such engineering principles. Then, operating below the isthmus really affords you more room than above. If it be such a serious matter to wound it, it seems in nearly as much danger from above as from below. Let any one walk round the dissecting-rooms when there are eight or a dozen bodies of all sexes and ages on the tables, and see how much trachea is visible above the thyroid isthmus; at the most, he will find in each, generally, merely an indication of the first tracheal ring. In operating, therefore, for tracheotomy, unless I were specially requested by the physician, or saw some good reason for doing otherwise, I would begin my incision over the upper margin of the sternum, regulating the length of the incision as I would for an artery—the deeper the part to be reached, the longer the skin wound; so a fat neck would require a longer cut than a lean one. A practised dissector at once recognises the subcutaneous parts and the bias of the veins; in most cases, they will all be following some definite direction to either right or left, or be in two sets with a space between them. What I believe really is often confusing, is when close to the trachea the muscles on each side become rigid, and the finger feels as if in a hole, but in an instant the trachea again rises and is recognised. In some, the latter is very small; in others, of large calibre. In one patient on whom I did tracheotomy, it was as small and moveable as a bird's. In this case, for years a gradually increasing tumour in the neck had pressed upon it, and I could only introduce a small child's canula. In another on whom I operated some months ago,—a large, fleshy young woman, suffering from diphtheria,—the division of two rings easily admitted a canula which I had frequently used on other occasions, and found to fit tightly after dividing three or more rings. On making the tracheal wound, it is well to insert the scalpel handle, and, turning it half round, allow the patient to breathe a few times and recover himself a little before introducing the tube. The spasm at this part of the operation is sometimes very painful to witness, and the efforts of the patient interfere with the introduction of the canula; but the welcome air gives fresh courage, and he will usually cheerfully submit to the subsequent proceedings.

**Should we give Chloroform?**

In cases where tracheotomy is performed for dyspnœa, the result of disease, I should be very reluctant to administer chloroform. I was present on one occasion when it was given to a patient of Mr Fergusson's by the accustomed hands of the late Dr Snow. The dyspnœa was caused by syphilitic ulceration of the larynx, and was not at the time very urgent, but, after a few inhalations, death appeared imminent; and if Mr Fergusson had not quickly opened the windpipe, the man would doubtless have died. Certainly the impression of the bystanders, and Mr Fergusson himself, was, that the chloroform had caused the sudden and alarming symptoms. Professor S. D. Gross, however, says:—"The use of anæsthetic agents, however, greatly facilitates the operation, and divests it of much of the dread which surgeons have always so justly entertained regarding it."—P. 528, v. ii.

**Chloroform after the Operation.**

But immediately after the trachea is opened, and a few inhalations have brought back colour to the lips, when, after every few inspirations, there is an exhausting paroxysm of coughing, then chloroform is most beneficial. It need not be given in such quantity as to produce unconsciousness, but calm; and a few drops on a handkerchief, held near the orifice of the tube, are quite sufficient. When a fit of coughing comes on, it may be given, and the patients become at last impatient for it.

One troublesome part of the after-treatment is keeping the tube clear; and, indeed, there seems great reason to believe that our present close-sided canula would admit of much improvement, and that the double tube, the external part of which consists of two slips which may be pressed together like a forceps, would be most easy of introduction, and most efficient. For cleaning single tubes where the fluid secreted was very copious, I have found that a piece of gum-elastic catheter, fitted into the hole of a common penny vulcanized india-rubber ball, answered very well as a sucking pump. Mr Erichsen mentions a case in which he performed tracheotomy on a young woman, and was obliged to empty the windpipe by sucking out three or four mouthfuls of blood and mucus. He was rewarded by his patient's recovery.

**Keeping Canula clear.**

**Danger of Sucking the Tube.**

There is no doubt that the surgeon's own feelings should be held of no account where his patient's safety is concerned; but it is well to remember that, in doing this anything but pleasant performance, where the operation has been for laryngitis, the sucker runs some risk. It is not very long since a medical man in Paris lost his life from laryngeal disease contracted in this way. Dr Smith, of Springfields, Massachusetts, U. S., was once seriously ill from sucking the trachea of a croupy infant. My assistant, Mr Shuldham, lately found himself with a badly-inflamed sore throat from sucking a tube I had put into the trachea of a young woman with acute laryngitis; and, about three years ago, after having sucked thirty or forty times the mucus from a canula I had inserted in the windpipe of a little girl with diphtheritic exudation in the mouth and fauces, felt my throat dry, stiff, and sore within six hours of doing so, although I had carefully washed my mouth after each application of it to the tube. Within twenty-four hours I was very dangerously ill, with a condition of throat very closely resembling my patient's. I should not, therefore, be inclined to repeat this process on any future occasion; for, setting aside its nastiness, the double canula catheter and the india-rubber ball do nearly as well.

When should the tube be removed?

*As soon as possible;* and, if there is proper attendance in inflammatory cases, it may be taken out directly the sputum comes through the rima glottidis, or the exudation softens; but if the patient is at a distance from assistance, or among timid people, great caution is necessary, for a recent tracheal wound contracts very rapidly, and the soft elastic tissues at the sides soon close, while the glottis refuses to take all the work on such a short notice.

I was much impressed with this in a recent case, where I had placed a tube in a man's throat a fortnight before. His medical attendant removed the tube at 10 A.M.; and at 2 P.M. the same day I was sent for, and found him in a paroxysm of suffocation, with the wound contracted, so that I could not get in the canula which had been taken out only four hours before, and had to content myself with a far smaller one. One great objection to leaving the tube in for a length of time, is the contraction which seems to occur in the glottis when unused. The tubes, which have a hole cut in their upper part, allow some air to pass upwards; and they may be closed for a few hours with a small plug, so as to get the laryngeal orifice of the windpipe gradually accustomed to a renewal of its duties.

If worn for some time, the edges of the cut rings of the trachea bevel off on their inside, and the sides of the wound grow callous. In this condition the tube may be removed at the will of the patient; but it should be covered by some contrivance, to prevent the entrance of dust. One patient of mine may be seen walking the streets of Edinburgh with a most reverend appearance, derived from muslin appendages, like clergyman's bands, which he wears for this purpose.

It is said that the tracheal cartilage is not reproduced; but the following case seems to indicate that it is, at least in the very young. Some years ago I performed tracheotomy on an infant, assisted by Dr Land, now of Spanish Town, Jamaica. The windpipe was so small, that I could at first only get in a piece of a No. 10 gum-elastic canula; and, in my efforts to introduce a larger instrument, I broke one ring, so that it hung loose on one side; in short, the tracheal wound was a very untidy one. I removed the tube next day, and closed the wound; but, owing to the child twisting his head, the air got into the cellular tissue, and his neck, chest, and shoulders became emphysematous. I reintroduced the tube, and repeatedly put a probe into the trachea, and picked out pieces of false membrane. He recovered; and more than a year afterwards I heard that he was ill of some infantile malady. I went to his home, and found him dead. The cicatrix was still very distinct in the skin, and I cut it out along with the trachea. In the latter there was no mark; the rings were perfect, and a white line on the mucous membrane was the only indication of a former lesion.

Is tracheotomy, or rather, is an artificial opening in the windpipe dangerous, and does it add much to the danger of a disease? It does not appear to be dangerous when done for the removal of foreign bodies, if done in time, and no exploratory dives with instruments made into the trachea or bronchi. True, suicidal wounds of the windpipe frequently terminate fatally, but they are exceptional in every way. In the case of croup, Dr Meigs says, "It has also been shown, I think, that the operation is in itself alone but little dangerous to life." But the operation in the matter of croup is somewhat unjustly used, it seems to me, by writers on the subject, and those who collect statistics from many different countries, charities, and practitioners. How many times has every practical surgeon been called in to operate on patients already dying, who have had their blood more and more poisoned every hour for days, until the approach of death is evident to every one, and the operation is at last decided on, as if a little oxygen could then work such marvels as to undo all the accumulated mischief in a few minutes; while the surgeon is unwilling to give the poor child its *coup de grace*, and still more reluctant to deprive it of what, after all, *may* be a chance for life?

Again, all that tracheotomy pretends to effect, is to gain time, to give the physician's remedies time. This observation may appear self-evident; but in practice we constantly see that, as tracheotomy is deferred to the last moment, so it is looked on as the last *remedy*.[1] Again, if tracheotomy is not always followed by recovery, it is generally followed by increased comfort; so there seems to me every argument for its performance, not only when the disease is *purely* laryngeal, but when the obstruction to breathing is principally, though perhaps not wholly, above where we can open the trachea.

The after-treatment, of course, must depend on the disease which produced the dyspnœa; but there are few cases which will not require stimulants, and the most nutrient food which can be taken. Sometimes the fluids, when administered by the mouth, trickle down the windpipe and come out at the tube. This may come on immediately after the operation, or not till the third or fourth day. "It rarely lasts in children," says M. Trousseau, "beyond the tenth or twelfth day." This great authority recommends that all fluid food should be interdicted. When infants are much exhausted after any operation, I have remarked that fluid is apt to go the wrong way; but in both young and old, where there is this condition, it seems to me better to trust principally to enemata of beef tea, and brandy or wine.

The following are some of the cases in which I have operated under such circumstances as those I have alluded to:—

1. Boy, æt. 2. Croup. Trachea opened close to sternum; veins easily avoided; tube removed in 48 hours. *Recovered.*

2. J. J., æt. 5, girl. Diphtheritic membrane in mouth, and a mucous râle in thorax. Trachea opened near the sternum; no bleeding. At first relieved by the operation; *died* 10 hours after.

3. J. M., æt. 3. False membrane coughed up, and much râle in chest. This child was much exhausted, but I opened the trachea. No bleeding. *Died* in 12 hours. Much relief at first from operation.

4. Boy, æt. 2. Trachea opened for croup, principally laryngeal; but I just reached the house in time to open his windpipe and see him die.

In Cases 2, 3, the patients were so exhausted that they were dying when the operation was done; but the relief it brought them even in their reduced condition quite warranted the operation, and the only regret was not performing it sooner.

### 5. *Tracheotomy for Erysipelas.*

Man, æt. 30. Erysipelatous sore throat, with dry, husky cough. Dyspnœa came on suddenly. Trachea opened very low down; tube removed in 21 hours. The erysipelas spread from the wound round his neck, but he rapidly recovered.

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[1] My own opinion is, that it should never be performed except as a dernier ressort when EVERY OTHER REMEDY has failed, and death seems inevitable.—*American Medico-Chirurgical Journal.*

### 6. *For Small-pox Pustules in Larynx.*

Man, æt. 38. Patient of Dr T. Keith's. Had been ill of small-pox for two months, during which time he had undergone a severe attack of pneumonia. Subsequently pus appeared in the anterior chamber of the left eye. Dr Keith incised the cornea and evacuated the pus; the wound healed, and vision was restored. Symptoms of laryngitis now set in, with occasional violent attacks of dyspnœa, which became so frequent that I was desired by Dr Keith to open the trachea, which I did below the thyroid isthmus. The patient at once indicated that he was relieved; but occasional violent paroxysms of coughing suggested the use of chloroform, which was given him at intervals.

For several days, small round substances, like the scabs of pustules, were coughed through the tube, and he hawked up many from the back of his pharynx.

Two weeks after the operation, Dr Keith tried whether he could do without the tube; but the larynx was so irritable, that, after a few inspirations, spasm ensued, and it had to be reintroduced.

He has quite recovered his health, but still wears a tube. If the latter is obstructed or removed, he can force air through his glottis in expiration, but cannot inspire without great effort and a peculiar crowing sound, and this experiment is followed by a most distressing paroxysm of dyspnœa.

I lately saw, at one of the valuable Saturday lectures given by Dr Haldane at the Royal Infirmary, the larynx of a patient who had died with small-pox. There was distinct false membrane visible upon it. Dr Alexander Simpson informs me that he has seen round patches, supposed to be small-pox pustules, in the windpipe, demonstrated by Professor Virchow to be exudations of lymph.

It is possible the patient whose case I have briefly recorded had both; indeed, he ran the gauntlet of nearly every symptom he could well have; but as each appeared, Dr T. Keith, with admirable judgment, met and overcame it.

### 7. *For Diphtheria.*

Woman, æt. 21. Sore throat a week, coughing up occasionally large, tough portions of false membrane for twenty-four hours. Face congested, lips livid, surface cold. Tracheotomy low down. *Died* in three hours.

Although the operation was performed in this case, there was but little indication for it further than the presence of diphtheria in the throat; for she seemed dying as if poisoned by the disease as much as from asphyxia. She seemed to derive little or no relief from the operation.

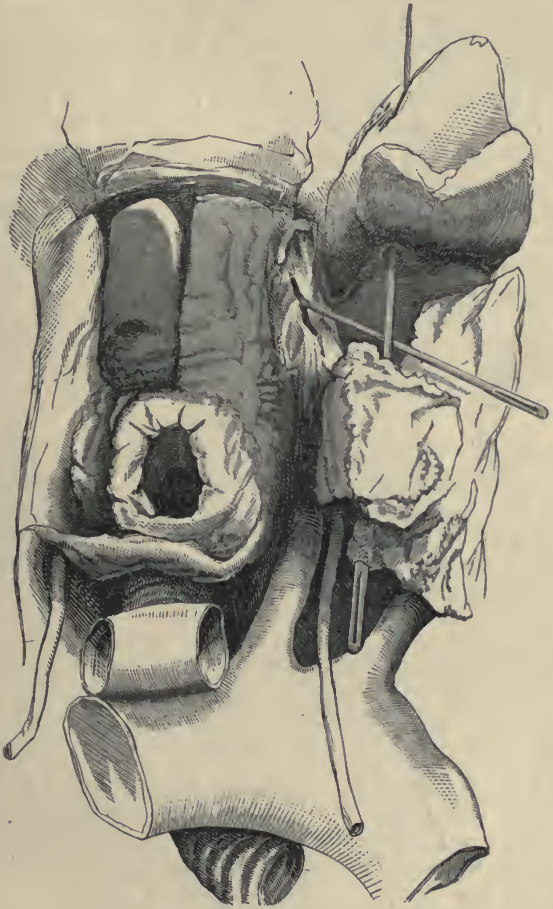
### 8. *Case of Tracheotomy for Stricture of Œsophagus.*

I was called by Dr Alexander Simpson and Dr Thomas Keith to see M. B., æt. 30. This woman had been a nurse-maid in a family living near Edinburgh. Twelve months ago she was troubled with cough, and subsequently dysphagia. An eminent surgeon endeavoured to pass a probang down her gullet, but was unable to do so. Since that time the difficulty of swallowing has gradually increased, and for the last three weeks has been so extreme as to prevent her taking food by the mouth. She is entirely supported by nutrient enemata.

*Present Condition.*—Her face is pallid. She sits up with her head leaning forwards and to the left side, her mouth kept slightly open. Her tongue is red and dry, like raw meat; and occasionally she wipes a glairy secretion out of her mouth. Paroxysms of coughing occur frequently, and she then spits up a frothy mucus tinged with blood. Her neck feels hard, especially on the left side, where there is also a swelling, resembling a number of enlarged lymphatics, which have a violent pulsation from their proximity to the carotid. Pressure on this swelling causes pain. The trachea is pushed to the right side. Her general health is good for a person who cannot take any nourishment, and her fortitude is extraordinary.

Dr Thomas Keith is of opinion that ulceration is taking place between the gullet and windpipe, and that tracheotomy will be necessary.

Twenty-four hours after I took these notes, Dr Keith desired me to put a tube in her trachea, which I accordingly did. As I was not sure of the nature of the tumour, or its probable future, I made the incisions as low as possible. Like many patients under similar circumstances, she could not lie with her head back, and slightly increased the difficulty of the operation. It will be seen, from the accompanying cut, that the tracheal wound is an inch above the margin of the innominata vein. She lost no blood, notwithstanding the depth of the wound, and felt much relieved; but, owing to the frequent attacks of coughing, was obliged to have recourse to chloroform. A week after, I tried to pass a tube down the gullet, but, meeting resistance, withdrew it. About a fortnight after, she gradually recovered the power of swallowing liquids; and could take tea, eggs and milk, etc., etc., slowly, but without suffering. Each mouthful, however, in its passage down, produced a singular squeaking sound in the gullet. Gradually, however, the swelling increased, became red and tender; the lip of the tracheotomy tube, pressing on the margin of the sternum, produced ulceration of the skin, and she was in a very miserable condition. Feeling sure that the tumour contained pus, I passed a small knife into its most prominent part, when a quantity of air escaped by the wound. However, next night, Dr George Keith and I visited her again, and I then passed a knife outside and behind the sterno-mastoid. This second puncture was followed by the escape of a large quantity of fœtid pus and some air. After this we hoped that there would be great relief; but the loss of support seemed to throw the pharynx out of gear, and she could swallow nothing. Milk escaped through the apertures made by the knife and beside the tracheal tube.



She was kept alive by injections till November 23, when some blood escaped by the wound outside the sterno-mastoid. Pressure arrested it, but it soon began to well into her mouth, and in the course of the day there were four ordinary slop-basins filled with blood. By this time, I ought to have mentioned, the swelling involved the right side of her neck, and extended on the left side from the chin to the sternum. We could not ascertain where the blood came from, and in her exhausted condition we were reluctant to make incisions which might prove of no use. She died from syncope on November 24, at 5 P.M.

*Post-mortem Examination.*—The gullet was contracted to half an inch at its junction with the pharynx. The back of the cricoid cartilage, the mucous membrane which covers it, the muscles, the arytenoid cartilages, were gone; only the small nerve of communication between the upper and lower laryngeal nerves remained. The œsophagus was small and narrow in its whole length (V). The thyroid cartilage was perforated in each ala by irregular apertures; that on the left side communicated with the cavity of an abscess the size of a turkey's egg, in which were seen the common carotid, stripped of its sheath, and, above and below, the open ends of the internal jugular vein; between these ends the vessel had disappeared. The wound of tracheotomy was about an inch and a quarter from the skin to the trachea; the rings of the latter were rounded off, and the mucous surface slightly absorbed from the pressure of the tube.

It was now evident that the bleeding had come from the internal jugular vein. If I had been aware of this, I might have slit up the abscess and used direct pressure; but it is doubtful whether, under the circumstances, it was not as well to leave her alone.

### 9. *For Laryngitis.*

I was called by Dr Brown, of Dublin Street, to see M. J., æt. 21, whom he thought would require tracheotomy. This patient had been subject to attacks of laryngitis from infancy, and upon this occasion she had complained of sore throat for several days. Dr Brown applied six leeches to the neck; and, shortly after I saw her, she had croupy breathing, and a quick, full pulse. The mucous membrane of the fauces was red and dry, and elevated in parts. The symptoms not being at that time sufficiently urgent to warrant an operation, we left her, and I heard afterwards that they had subsided; but at one o'clock next day, as I was about to cut down on a piece of dead bone in a girl's arm in my own house, a messenger came to tell me "the girl was dead, but I might come if I liked." Having the necessary instrument in my hand, I ran off, full of remorse at declining to operate in the morning. The girl had apparently fainted; she was pale, pulseless, and apparently not breathing. Dr Brown being fortunately in the house, we quickly placed her in a convenient position, and I opened her windpipe. Directly the air was admitted, she became very unruly, and threw herself about. There was a good deal of venous bleeding during her struggles, but it stopped whenever the tube was in. She then burst into tears, and insisted on shaking hands all round. We found it necessary, for the first forty-eight hours, to give this very demonstrative young person considerable quantities of chloroform, which my friends, Messrs Shuldham and Barry, kindly sat up all night to administer.

Dr Brown continued to treat the laryngitis as if tracheotomy had not been performed, with chlorate of potass, solutions of nitrate of silver, etc., and saline diaphoretics and nutrient enemas; and when the upper orifice of the windpipe was, in his opinion, sufficiently restored to health to be trusted, the tube was removed (on the fourteenth day), and the wound rapidly healed.

The upper edge of the wound in this case was two inches and two lines from the upper edge of the thyroid cartilage, and an English inch in depth after all swelling had subsided. When doing the operation, I felt pulsation on each side of my forefinger, and made the wound in the trachea higher than I generally do, lest I should injure anything at the root of the neck; and that, I believe, was the reason of the venous hæmorrhage occurring, which I had never before been annoyed by.

## CRURAL HERNIA.

### *Strangulation for Six Days; Recovery.*

*Nov.* 22.—Called to a woman, æt. 56, lean and old-looking for her age.

She has had a rupture, now the size of an apple, for many years, and is not sure whether it was ever wholly reducible. She has never worn a truss. Four days ago she remarked that the tumour was larger than usual, and did not decrease in size when she lay down. Constipation and pain occurring, she applied at the Dispensary. Won't submit to an operation, and the taxis has no effect.

*Nov.* 23.—The symptoms present yesterday are much aggravated, and she is anxious for the operation. Her face is bedewed with cold sweat; she vomits stercoraceous fluid; her abdomen is tense and tender; her pulse small and quick. The skin over the tumour is livid, and it feels boggy.

I therefore cut down on it, and opened the sac, giving exit to a quantity of dark-coloured fluid. There was in it a knuckle of dark chocolate-coloured intestine and some omentum.

I cautiously divided Gimbernat's ligament, and also nicked slightly the crural arch, as I scarcely dared use any pressure on the gut, which I feared would give way. With considerable hesitation I returned it within the abdomen. On examining the omentum, its discoloured and unhealthy appearance induced me to leave in the sac, although it had no adhesions, and might have been easily returned.

For the first twenty-four hours there was little relief from the operation. Pain and vomiting continued; they gradually ceased, however, and were succeeded by violent purging.

She was given diffusible stimulants, arrowroot, and essence of meat, in small quantities, and gradually recovered. The wound healed by first intention, with the exception of a small aperture, which continued to drain an oily fluid for a fortnight, when she was provided with a truss and allowed to follow her usual occupations.

### *A Second Operation on the same Crural Hernia.*

I was called by Dr Rosa to see a female patient of his, suffering from a strangulated hernia. She was a powerful woman, 72 years of age, and had been the subject of hernia in her right groin for a very long time. More than twenty-three years ago, Mr Fergusson, now of London, and Sir George Ballingall, operated upon her, and the scar of a Y incision was still very distinct in the ample fold of skin which hangs over Poupart's ligament. Since that time she has worn a truss, which of late has become very dilapidated. The day before I saw her she awoke at 2 A.M. with pain in her abdomen. She could not return the rupture; and sent for Dr Rosa, who tried to return it with the taxis, but it was unyielding. Next day, at 10 A.M., he sent for me; and I ordered large gruel enemata, and arranged that if these were ineffectual in four hours I would operate.

The tumour was the size of an orange, hard and tender. She had abdominal pain and occasional sickness. (Her friends had been lavish in administering doses of castor-oil.)

As at 2 P.M. she was in the same condition, Dr Rosa administered chloroform; and, flexing her right leg by placing a pillow under the knee, I proceeded to operate in the usual manner, viz.:—I pinched up the skin over the middle of the tumour, and, transfixing, divided it and the subcutaneous cellular tissue; then passed the point of my scalpel cautiously into the sac; and when fluid oozed by its side, I substituted a probe-pointed bistoury, and slit it up. There was no danger of wounding the intestine, the sac was so filled with serum. I prevented the escape of the latter, as it served to protect the intestine from the air. At the bottom lay a knuckle of dark-coloured gut; and the sac remained so firm and cup-like, that it resembled an old spirit-preparation rather than a piece of tissue in a livid body. I divided Gimbernat's ligament; and, when doing so, felt a small round cord passing upwards and outwards. On pulling the gut gently down, I found that this was apparently a long string of fibrine, and as probably one of the causes of the strangulation. Gimbernat's ligament was, however, just as distinct and well-marked as I have felt it on other occasions. The tissues over the sac were apparently absorbed; there was scarcely anything between it and the skin. Hence the operation scarcely occupied one minute.

On awaking from the chloroform, she expressed herself as much relieved. The bowels were moved within half an hour; and Dr Rosa writes to me that the wound was healed in three weeks. She had a slight attack of erysipelas in the second week, which delayed cicatrization.

There is nothing, perhaps, about this case to justify its being published, except the fact that it was a *second* operation at the long interval of twenty-three years; that the parts were much the same as they must have been before their first division; and that a band of lymph surrounded the intestine just within the abdomen.

## ARTICLE V.—*A Case in which Two Ounces of the Wine of the Seeds of Colchicum were accidentally taken, and which Relieved a Gouty Diathesis.* By JOSEPH BULLAR, M.D., Physician to the Royal South Hants Infirmary.

"YOU wished me (writes the patient) to narrate, in writing, an accident that occurred to me some years since, which I will do as briefly as possible.

"In youth I suffered severely from frequent attacks of gout, sometimes in my hands, but oftener in my feet; to relieve which I took small doses of wine of colchicum—always keeping by me a bottle, in case of need. Feeling out of order, I had taken, on going to bed, a blue pill; and had a black dose on my dressing-table, to swallow next morning. On being called by my servant, I told him, 'You will see a bottle of medicine on my table; pour it out, and give it to me;' which he did. As I swallowed it, however, I thought it unlike any black dose that I had before taken, but fancied that means had been taken to disguise its usually unpleasant taste. My servant then asked me if I would then get up, or if he should bring my hot water later? I replied, 'Do so in two hours' time,' which he accordingly did. On my reaching my dressing-table I was greatly surprised, first, to see the black dose, which I supposed I had swallowed, still lying in the blue paper, as it came from the chemist's, intact; and still more so to see my bottle of colchicum empty. On this, I rang my bell, and told my servant to fetch the first medical man he could find at home. He returned with Mr Moore, of Arlington Street, who, on hearing from me what had happened, and examining the empty bottle, after questioning my servant if he could safely swear that it was full when he poured it out, said to me, 'You ought to go down on your knees and thank God it was so; for, had it been half-full, or a one-ounce bottle instead of two, no power on earth could have saved your life. As it is, the overdose you have taken will work itself off by violent purging or vomiting. It is now too late, too long a time has elapsed, to use the stomach-pump with any effect, it having had time to get into your system. Take your black dose now, and another in an hour and a-half's time;' which I did. I continued perfectly well; and, whilst taking my accustomed drive in the park at four o'clock, I became very sick—in fact, perpetually vomiting till twelve at night, when, on Mr Moore applying a liquid blister to the pit of my stomach, after a little it ceased, and the next day, except being very nervous, I was quite well; and, excepting (which is very rare and far between) occasional swelling of my foot, I have never suffered from gout since, being now 58 years of age, and 34 when this accident happened."

On carefully investigating the patient's history, I find that his father and grandfather were gouty, and that he himself had his first attack of gout at school, when 14. He subsequently went to India, and returned when he was about 25; and for ten years after this he had severe attacks of gout in one or both feet, or shifting from one to the other, and also in his hands, once or twice every year, attended with great pain, and confining him at least ten days. But after he took the large dose of colchicum, he never (except once) had a severe attack of gout at all similar to those before the accident. He says those attacks he has had are not like the same thing, and he often doubted if it were gout. There has been only redness and swelling of the foot, beginning at the great toe and spreading upwards, without pain or constitutional disturbance. During the eight years he has lived in this neighbourhood, he has had no attack; two or three times he has had, for a day or two, swelling of his great toe joint. In the last autumn, whilst abroad and living highly, he had, for a few days, swelling of his foot, without pain. The only treatment he has adopted has been the local application of olive oil, and leaving off stimulants at the time. His health has been good. He thinks that the colchicum wine was obtained from Corbyn's, or Savory and Moore's. He is sure it was from a first-rate chemist; indeed, the severe and continued vomiting, lasting eight hours, shows that the colchicum was of good quality. The two aperient draughts, one taken two hours, and another four hours after the colchicum, produced no action on the bowels. He breakfasted about 12 at his club; and, as is his custom, he eat largely of fish, meat, and the other usual materials of an ample breakfast.

The singular points in this case are, that there was no vomiting until seven hours after two ounces of colchicum wine were taken, and then violent vomiting for eight hours, with no ill effects except nervous weakness for the next day; but, on the contrary, with relief, for the last 24 years, of those severe and painful attacks of gout to which he had been subject for 10 years before.

On referring to Dr J. M. Maclagan's valuable and standard monograph on colchicum (*Edinburgh Monthly Journal of Medical Science*, Jan. 1852), and to *Taylor's Medical Jurisprudence*, I find numerous cases of fatal poisoning by the wine of the seeds and of the bulb of colchicum, in doses of ℥j., ʒiss., ʒij., ʒv., and ʒxviij., and one recovery after ℥j. had been taken.

These cases show that the recovery of this gentleman was not, as his medical attendant surmised, from the largeness of the dose. Reasoning from our knowledge of the usual action of drugs in disease, his safety depended on his hereditary and strongly-marked gouty diathesis giving him a toleration of colchicum; just as in pneumonia, tartarized antimony can be taken in such doses as would poison the healthy, and, in delirium tremens, poisonous quantities of opium and digitalis (as Mr Jones has lately shown) have been administered without loss of life. The power of the remedy seems to be spent in combating the diseased process.

That uric acid (or urate of soda) is in gout the *materies morbi*, and that colchicum eliminates uric acid, are admitted facts. If we go a step farther, we may say that there is a morbid action of the metamorphosis of the tissues, of which the urate of soda is the outward sign, and that colchicum acts by correcting this morbid action. The effect of this two-ounce dose was, therefore, an extreme instance of the usual action of the remedy producing not merely a temporary abatement of a gouty fit, but, from the profound impression the large dose made on the economy, a relief which has lasted 25 years.

Sir Henry Holland's opinion, based on his practice, that colchicum may be given so as to be *preventive* as well as *curative* in gout, is strengthened by this curious case.

SOUTHAMPTON, *January* 8, 1861.

## ARTICLE VI.—*On the Rate of Mortality in the Medical Department of the British Navy for the Nine Years ending in* 1860.

By THOMAS STRATTON, M.D. Edin., Staff-Surgeon, Royal Navy.

IN the *Edinburgh Medical and Surgical Journal* for January 1844, I gave an account of naval medical mortality for twenty-five years, from 1817 to 1841. In the same *Journal* for January 1853, I inserted the statistics of the same subject for the ten years ending in 1851, and I now beg to offer a continuation up to the end of 1860:—

| Year. | Number of Medical Officers, R. N. | Number of Deaths. | One Death in Officers. | Deaths in the Thousand. |
|---|---|---|---|---|
| 1852 | 906 | 32 | 28·03 | 35·03 |
| 1853 | 905 | 36 | 25·01 | 39·07 |
| 1854 | 891 | 25 | 35·06 | 28·05 |
| 1855 | 906 | 25 | 36·02 | 27·05 |
| 1856 | 894 | 32 | 27·09 | 35·07 |
| 1857 | 902 | 31 | 29·01 | 34·03 |
| 1858 | 869 | 36 | 24·01 | 41·04 |
| 1859 | 875 | 24 | 36·04 | 27·04 |
| 1860 | 911 | 37 | 24·07 | 40·06 |

The number of officers is taken from the January *Navy List* for that year: it would perhaps be a little more accurate to add together the numbers in the four quarterly lists, and divide by four: those on the retired list are taken, as well as those on the active list.

The deaths are taken from the *Navy Lists* for each quarter of the year.

It would not be a just comparison to compare naval medical mortality with the general mortality at all ages in civil life, as the proportionate mortality in infancy is so much greater than at later periods of life. We must limit the view to the mortality observed in persons of twenty-one years and upwards, in the civil population. It will be seen that the mortality among naval medical men is very much greater than it is among adult males in civil life.

In the nine years the total number of deaths is 278; this is one death in 28·09 officers, and 34·40 deaths in the thousand. This is about double the mortality in male adults in civil life.

*February* 1861.

# Part Second.

## REVIEWS.

*Cellular Pathology, as based upon Physiological and Pathological Histology.* By RUDOLF VIRCHOW, Professor of Pathological Anatomy, etc., in the University of Berlin. Translated from the Second Edition of the original by Frank Chance, B.A., M.B. Cantab. Pp. 511, with 144 Engravings in Wood. London: John Churchill. 1860.

THE name of Rudolf Virchow is a household word in pathology. Of the many distinguished men who have devoted themselves during the last twenty years to the cultivation of scientific medicine, no one can claim a higher place than the Berlin Professor. Gifted with admirable powers of observation, guided by a rare sagacity and intelligence, pursuing his varied researches with an enthusiasm and an industry almost unrivalled, there is scarcely a department of histology or pathology which Virchow has not cultivated and adorned. These researches, owing doubtless to their having been for the most part scattered through a variety of foreign periodical publications, have not been so generally appreciated in this country as they deserved to be; indeed, in the preface to the second edition of the work before us, Virchow complains that, even in Germany, much of what he has accomplished is unknown to his contemporaries,—a result attributed by one of his critics to his having brought forward too many arguments and lengthy cases in support of his views. In this country, the name of Virchow is most often associated with his researches on leukæmia, embolia, and amyloid degeneration; on the Continent he is fully as well known as the successful opponent of the doctrine of specific dyscrasiæ as maintained by the Vienna school, and as the supporter of the parenchymatous or textural character of inflammation, in opposition to the neuro-pathological doctrine of Henlé and his followers, and to the exudation theory of most pathologists. We were accordingly delighted to see the present volume, which contains an excellent translation of a series of twenty lectures, delivered at Berlin in the spring of 1858, at the request of a number of physicians practising in the town, and which, in a limited space, presents a clear exposition of almost all Virchow's pathological doctrines. It does not contain, or profess to contain, an exhaustive statement of his views, or of the arguments on which his opinions are founded; but it supplies a key to his whole system, and is sufficiently full to enable any one to judge for himself, regarding at least the probability of many of his doctrines. As much that is contained in this volume must be new to many of our readers, we propose to give a brief abstract of its most important contents; not that we shall attempt to give an analysis of the entire work, for, as it is itself much condensed, to do so would far exceed any moderate limits: we shall merely endeavour to indicate the most fundamental points on which this system of pathology is based.

The first chapter is devoted to a consideration of the characters and functions of cells. Many histologists and pathologists look upon molecules and granules as the primary elements of the tissues; but Virchow maintains that "the cell is really the ultimate morphological element in which there is any manifestation of life, and that we must not transfer the seat of real action to any point beyond the cell." On this principle, confirmed by the results of observation, he entirely denies the truth of the theory of Schleiden and Schwann as to free cell formation, according to which a nucleus first shows itself in the formative fluid or blastema, and the cell wall is then formed by the precipitation of fine granules around it. Having pointed out that one great difference between vegetable and animal tissues consists in the presence in the latter of much intercellular substance, Virchow expresses his belief that this substance is under the influence of adjoining cells, that any change affecting the cell affects the intercellular substance, and often shows itself there before any change can be observed in the cell contents. This doctrine of cell territories has highly important pathological applications.

The object of the second chapter is to show that all tissues grow from existing tissues, and that neither fibres, globules, nor elementary granules, can be looked upon as histological starting-points. "Even in pathology," says Virchow, "we can now go so far as to establish, as a general principle, *that no development of any kind begins* de novo, *and consequently as to reject the theory of equivocal* [spontaneous] *generation just as much in the history of the development of individual parts as we do in that of entire organisms.* Just as little as we can now admit that a tænia can arise out of saburral mucus, or that out of the residue of the decomposition of animal or vegetable matter an infusorial animalcule, a fungus, or an alga, can be formed, equally little are we disposed to concede either in physiological or pathological histology, that a new cell can build itself up out of any non-cellular substance. Where a cell arises, there a cell must have previously existed (*omnis cellula e cellula*), just as an animal can spring only from an animal, a plant only from a plant. In this manner, although there are still a few spots in the body where absolute demonstration has not yet been afforded, the principle is nevertheless established, that in the whole series of living things, whether they be entire plants or animal organisms, or essential constituents of the same, an eternal law of *continuous development* prevails. There is no discontinuity of development of such a kind that a new generation can of itself give rise to a new series of developmental forms. No developed tissues can be traced back either to any large or small simple element, unless it be unto a cell."—P. 27. This is the fundamental doctrine of Virchow's system of pathology; into a consideration of it we cannot, however, enter farther than to say, that all the recent observations tend to confirm it. The doctrine itself was first clearly stated by Professor Goodsir, in his articles on "the Secreting Structure," and on "Centres of Nutrition."[1] Virchow alludes to these observations, and gracefully acknowledges his obligations by dedicating to Professor Goodsir his present work.

The physiological tissues are next considered; these are divided into three groups or classes. The first embraces those structures which consist exclusively of cells, where cell lies close to cell, and there is no intercellular substance; this class includes the epithelial formations and the glands. The description of these tissues is admirable; and we would, in particular, refer to what is said regarding the structure and development of nails as a model of accurate description. The second histological group is formed by the *connective* tissues (Gewebe der Bindesubstanz). Virchow differs from most histologists in his views regarding this group. Previous to his observations, connective tissue was generally considered to be composed essentially of fibres. Schwann believed that it was formed by the splitting up of cells into distinct fibrils, the nucleus only remaining. Henle was of opinion that there were no cells at all, but that nuclei only were found in the blastema at certain intervals; that the blastema split up into fibrils, and that the persistent nuclei were developed into longitudinal *nucleus-fibres*. Reichert showed that originally there was nothing present but cells, between which intercellular substance was deposited. He thought that the cells disappeared, their walls blending with the intercellular substance, and that the nuclei in some cases disappeared, in others were preserved. Virchow's opinion is that the cells are permanent: to use his own words—"I have found that Reichert, Henle, and Schwann, were wrong in maintaining that ultimately at best only nuclei or nucleus-fibres remained; and that, on the contrary, in most cases the cells themselves preserve their integrity. The connective tissue of a later period is, therefore, not distinguished in its general structure and disposition in any respect from that of an earlier date. There is not an embryonic connective tissue with spindle-shaped cells and a perfectly developed one without them, but the cells remain the same, although they are often not easy to see."—P. 44. It is not easy to overrate the importance of this statement, for without it the truth of the doctrine of the continuous development of cells cannot be maintained. We constantly find cells arising as the result of pathological processes in the substance of tissues, where cells are not supposed normally to exist. In the brain, for instance, where, with the exception of the ganglionic corpuscles of the grey matter, no cellular structure is, in general, recognised, we constantly find the development of pus, tubercle, and cancer cells. Were there no cells normally present, the cellula e cellula doctrine must fall to the ground; but here the importance of the connective tissues steps in. We are told that in the brain, as in every other tissue, connective tissue corpuscles are present, and that it is from these that the new growths have taken place. The difficulty of discovering these cells in certain situations, has hitherto prevented the doctrine founded upon their presence from being generally received. Connective tissue, we may state, embraces all the tissues which form the basis of the body, and bind the elements of the other groups together. Thus it comprehends cartilage, bone, mucous tissue, the various fibrous and tendinous expansions, areolar tissue, and so on. It penetrates everywhere; and on its presence, as explained in the following passage, the nutrition of a great part of the body is supposed to depend: "Amongst these different species of connective tissue, the most important for our present pathological views are, generally speaking, those in which a reticular arrangement of the cells exists, or, in other words, in which they anastomose with one another. Wherever, namely, such anastomoses take place, wherever one cell is connected with another, it may with some degree of certainty be demonstrated that these anastomoses constitute a peculiar system of tubes or canals which must be classed with the great canalicular systems of the body, and which particularly, forming as they do a supplement to the blood and lymphatic vessels, must be regarded as a new acquisition to our knowledge, and as in some sort filling up the vacancy left by the old vasa serosa which do not exist. This reticular arrangement is possible in cartilage, connective tissue, bone and mucous tissue, in the most different parts; but in all cases those tissues which possess anastomoses of this description may be distinguished from those whose elements are isolated, by the greater energy with which they are capable of conducting different morbid processes."—P. 48.

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[1] *Trans. Roy. Soc. Edin.*, 1842; and *Anatomical and Pathological Observations*, 1845.

The third class of the tissues embraces those where the cells have attained a specific and higher form of development; it comprehends the muscles, the nerves, the vessels, and the blood.

Having thus arranged the physiological tissues, Virchow passes on to the consideration of pathological growths or neoplasms. He maintains that the same types as have been established for the former hold good for the latter; that no neoplasm has a specific character, but that all have a physiological type. The important question of heterology or malignity is next considered; and Virchow's opinions are contained in the following passage:—"There is no other kind of heterology in morbid structures than the abnormal manner in which they arise, and that this abnormity consists either in the production of a structure at a point where it has no business, or at a time when it ought not to be produced, or to an extent which is at variance with the typical formation of the body. So, then, to speak with greater precision, there is either a *Heterotopia*, an aberratio loci, or an aberratio temporis, a *Heterochronia*, or lastly, a mere variation in quantity, *Heterometria*. But we must be very careful not to connect this kind of heterology in the more extended sense of the word with the notion of *malignity*. Heterology is a term that, in its histological meaning, may be applied to a large proportion of pathological new formations, which, as far as the prognosis is concerned, may unquestionably be called benignant; it is not rare for a new formation to occur at a point where it is certainly entirely misplaced, but at the same time does not occasion any considerable mischief. A lump of fat may very likely arise in a place where we should expect no fat, as, for example, in the submucous tissue of the small intestines; but, let the worst come to the worst, the result is only a polypus, which protrudes on the inner surface of the bowel, and may become tolerably large without giving rise to any symptoms of disease."—P. 63. All new growths may be divided into the two classes of homœoplastic and heteroplastic. The former do not differ from the type of the tissue from which they arise; they constitute, in fact, simple or numerical hypertrophies of existing elements. The latter consist of elements which correspond to existing types, but which do not arise from an increase in previously existing elements, but from changes in the original type of the parent tissue. The new growths may be physiological in structure; still in effect they may be malignant. With these opinions we thoroughly coincide. The tendency of all the later observations has been to show that there is nothing specific in the elements of morbid growths,—that tubercle corpuscles and cancer cells, for instance, have certainly their counterparts in healthy tissues.

Virchow attaches much importance to what he calls the doctrine of histological substitution. In all tissues of a like nature, we may find, even in perfectly healthy conditions, one tissue replaced by an analogous one belonging to the same group, or, in other words, by an histological equivalent. For instance, a surface upon which cilia were originally seen, may afterwards be found to have ordinary epithelium. In diseased conditions pathological substitution may occur, but here the new formation differs more or less widely from the existing type. Physiologically, the substitution is effected by the introduction of another tissue of the same group; pathologically, very frequently by the agency of a tissue belonging to another.

The object of the fourth, fifth, and sixth chapters is to show the mode in which nutrition is carried on. The vessels are generally spoken of as canals, which both provide for the interchange of materials, and control individual parts in the performance of this function. Virchow, however, believes that the vessels are not sufficient of themselves to provide for the nutrition of the body, and that they do not possess any active power of influencing the tissues. The tissues only differ in the degree of vascularity: in some, which are very vascular, the relation between the cells and the vessels is very simple,—they touch one another; the spaces between the vessels and the tissues gradually increase, until we come to bone and cartilage, where there are few or no vessels. It is here where we first begin to see the importance of the connective tissue corpuscles. In all connective tissues anastomosing cells exist; and in this way a circulation of nutritive juices is provided, by means of which the nourishment of parts which are not in immediate contact with the blood takes place. It will be observed that this system of anastomosing cells takes the place of the vasa serosa of the older writers, who believed that, complementary to the capillaries, there existed a system of minute vessels which conveyed the fluid parts of the blood, for the ultimate purposes of nutrition. These anastomosing cells are not, however, easily seen; in hard tissues, such as bone (where they are in the form of the lacunæ and canaliculi), they may be made out with facility; but in the soft parts they can only be recognised after special preparation of the parts, and very careful investigation.

The function of the blood-vessels is next considered. Virchow's object is to show that nutrition does not depend upon any special activity of the vessels, but on a specific activity of the elements of the tissues themselves. The peculiarity in the structure of the smaller arteries consists in the muscularity of their middle coat. When an artery is stimulated, contraction takes place; this, in consequence of the arrangement of its muscular elements, causes it to become narrower, and less blood consequently is supplied to those parts to which the vessel is distributed. This state of contraction is succeeded by a dilatation of the vessel, which is a passive phenomenon, and depends upon the wall of the vessel becoming fatigued and offering less resistance to the passage of the blood. The experiments of Claude Bernard show the same thing,—namely, that contraction is the active, and that dilatation is the passive phenomenon. Consequently, it is wrong to speak of active congestion, for the more active an artery the less blood passes through it.

The membrane of the capillaries is homogeneous, provided with flattened nuclei, and, from its structure, cannot possess contractile properties. The change of material which takes place between the blood and the tissues is explained partly by endosmose and exosmose, partly by a controlling power exerted by the capillary membrane, but chiefly by the existence of peculiar affinities between definite tissues and definite substances, in virtue of which certain parts are enabled, in a greater degree than others, to attract certain substances from the neighbouring blood. That a mere increase in the amount of blood sent to a part exercises a directly regulating influence upon the nutrition of the tissues, is disproved by the experiment of cutting the sympathetic in the neck of an animal; thereupon a state of hyperæmia ensues in the whole of that half of the head, which may continue for weeks or months without the least nutritive disturbance arising therefrom.

Virchow's views regarding the dyscrasiæ are contained in the end of the sixth chapter. The Vienna school maintained that various diseases depended upon a primary alteration in the blood; that pyæmia, for instance, and other pathological states, might occur independently of all local beginning, and of all infection. Starting from this principle arose Rokitansky's doctrine of the blood crases or dyscrasiæ,—a very attractive theory, no doubt, and one which was pretty extensively adopted. The truth of this doctrine Virchow totally denies: he allows, of course, that changes may take place in the composition and qualities of the blood; but he maintains that this change must always have a local cause, and that it cannot propagate itself *in the blood*, and there persist. To use his own words, "every dyscrasia is dependent upon a permanent supply of noxious ingredients from certain sources." This doctrine receives frequent illustration in succeeding parts of the volume.

The next five chapters treat of the blood, and of some of its morbid conditions; they contain highly interesting matter, but we can only refer to one or two points. Virchow believes that all the morphological elements of the blood are formed external to it. In the fœtus, indeed, blood-globules multiply by division, but there is no proof that this takes place afterwards. From the lymph the fibrine and white globules appear certainly to be derived; there is more doubt regarding the origin of the coloured corpuscles. The fibrine of lymph differs from the ordinary fibrine of the blood, inasmuch as it is not spontaneously coagulable, and does not become so until it has been exposed to the action of the air. While in this uncoagulable condition, Virchow calls it, not fibrine, but fibrinogenous substance; it is met with, not only in various so-called exudations, especially in pleuritis, but even in the blood itself.

One of Virchow's peculiar doctrines is, that fibrine is never exuded from the blood. Most pathologists have maintained that one of the most, or even the most, important of the phenomena of inflammation is the exudation from the blood-vessels of a fluid containing fibrine in solution. Virchow denies that such an exudation ever takes place: he believes, of course, that a serous effusion may exude from the blood-vessels; but he maintains that whenever fibrine is present, it is the result of a local irritation, and that it has been formed on the spot. As this is a cardinal point in his doctrine, we quote his own words:—"I have ventured to advance the hypothesis, somewhat bold perhaps, though I consider it perfectly able to sustain discussion, namely, that *fibrine generally, wherever it occurs in the body external to the blood, is not to be regarded as an excretion from the blood, but as a local production;* and I have endeavoured to introduce an important change in the views entertained with regard to the so-called phlogistic crasis in relation to its localization. Whilst it had previously been the custom to regard the altered composition of the blood in inflammation as a condition existing from the very outset, and especially denoted by a primary increase in the fibrine, I on the contrary have shown the crasis to be an occurrence dependent upon the local inflammation. Certain organs and tissues have inherent in them in a higher degree the power of producing fibrine and of favouring the occurrence of large quantities of fibrine in the blood, whilst other organs are by far less adapted for its production.

"I have, moreover, pointed out the fact, that those organs which with especial frequency exhibit this peculiar combination of a so-called phlogistic state of the blood with a local inflammation, are generally abundantly provided with lymphatic vessels and connected with large masses of lymphatic glands, whilst all those organs which either contain very few lymphatics, or in which these vessels are scarcely known to exist, do not exercise any influence worth naming upon the amount of fibrine in the blood. Former observers had already remarked that there were inflammations occurring in very important organs, as for example, in the brain, in which the phlogistic crasis was, properly speaking, not at all met with. Now it is precisely in the brain that we have scarcely any evidence of the existence of lymphatics. In those cases, on the contrary, in which the composition of the blood is earliest altered, namely in diseases of the respiratory organs, we find an unusually abundant network of lymphatics. Not merely the lungs are pervaded by, and covered with, them, but the pleura also has extremely numerous connections with the lymphatic system, and the bronchial glands constitute almost the greatest accumulations of lymphatic-gland substance possessed by any organ in the whole body."—P. 162. It is an interesting fact, that Dr Cappie, though in ignorance of Virchow's researches, had arrived from *à priori* considerations at the same conclusion.[1]

Under the head of the White Blood Globules there are some excellent remarks on leukœmia. Virchow distinguishes two conditions in which there is a great increase in the white globules of the blood. The one is Leukœmia, which is generally connected with an abnormal condition of the spleen: in this condition the increase of white globules is permanent; no instance of recovery from it is on record. The other condition is Leucocytosis: here the increase in the white globules is dependent upon an affection of the lymphatic glands; it is often a temporary, and even a physiological condition. Any irritation of the lymphatic glands gives rise to an increase of the white globules in the blood; for example, after every meal (which produces an irritation of the mesenteric glands) this increase may be observed; as pregnancy advances, the lymphatic glands of the inguinal and lumbar regions become enlarged, and here again a physiological leucocytosis is established. "If we proceed a step farther and consider pathological cases, we meet with these leucocytotic conditions in the whole of that series of diseases which are complicated with glandular irritation, and in which the irritation does not lead to a destruction of the glandular substance. During the progress of an attack of scrofula, in which, if the disease run a somewhat unfavourable course, the glands are destroyed, either by ulceration, or cheesy thickening, calcification, etc., an increased introduction of corpuscles into the blood can only take place as long as the irritated gland is still in some degree capable of performing its functions, or still continues to exist; as soon, however, as the gland is withered or destroyed, the formation of lymph-cells likewise ceases, and with it the leucocytosis. In all cases, on the other hand, in which a more acute form of disturbance prevails, connected with inflammatory tumefaction of the glands, an increase in the colourless corpuscles always takes place in the blood. So it is in typhoid fever, in which we observe such extensive medullary (markige) swellings of the abdominal glands; so it is in cancer patients, when irritation of the lymphatic glands manifests itself; so, lastly, is it in the course of the processes which come under the denomination of malignant erysipelas, and are so early wont to be accompanied by glandular swellings. Such is the meaning of this increase in the colourless elements which ultimately always refers us to an increased developement of lymph-corpuscles within the irritated glands."—P. 191.

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[1] See *Essays in Medical Science*, by James Cappie, M.D. Edin. 1859. Reviewed in this Journal in March 1860.

The twelfth and thirteenth chapters contain an admirable account of the histological anatomy of the nervous system. The only point to which we can refer, is the fact, that in all nervous parts a second tissue exists, which unites their elements together (and is hence called neuroglia, or nerve cement), which is one of the group of the connective tissues, and, like them, contains a large number of cells. "Experience," says Virchow, "shows us that this very interstitial tissue of the brain and spinal marrow, is one of the most frequent seats of morbid change, as, for example, of fatty degeneration."

The fourteenth chapter treats of the activity and irritability of the cellular elements, and of the different kinds of irritation; but as various of the statements brought forward are again referred to under the head of Inflammation, we shall consider them immediately. The two following chapters are occupied with the consideration of the passive processes in degeneration. They contain much interesting matter; and we would, in particular, direct attention to the account given of fatty degeneration, not only as being by far the best description of the process with which we are acquainted, but as an admirable illustration of Virchow's doctrine, that pathological processes are not specific, but that others analogous to them exist in normal life. But we must pass on to the doctrine of Inflammation, which we shall give as nearly as possible in Virchow's own words.

Irritation of the tissues, acting either directly or through the medium of the blood, must be considered the starting point of inflammation. As the result of it, the composition and constitution of the part undergo alterations which, at the same time, alter its relations to the neighbouring parts (whether they be blood-vessels or other structures), and enable it to attract to itself and absorb from them a larger quantity of matter than usual, and to transform it according to circumstances. Inflammation is not necessarily dependent upon hyperæmia; if it were, it would be illogical to speak of it as occurring in parts which do not stand in immediate relation to vessels. But if we compare the processes which present themselves in the cornea, in cartilage, or in the internal substance of a tendon, with those which are ordinarily seen in inflamed parts, the result unquestionably is, that the same inflammatory processes may occur everywhere alike; and that the changes in the vascular parts can in no essential particular be distinguished from those which take place in the non-vascular ones. A mistake has been committed in supposing that fibrinous exudations take place in many parts, where they are really not to be seen. Fibrinous exudations are rarely met with in the mucous membrane of the digestive tract, where the ordinary product of inflammation is scarcely anything more than an abundant secretion of mucus. We know of no form of inflammation of the brain or liver in which a fibrinous exudation occurs; because pus is occasionally obtained from a fibrinous exudation, it would be erroneous to suppose that this is always to be considered as its source. In fact, the situations where unquestionable fibrinous exudations occur are limited. Serous membranes yield fibrine upon even slight inflammatory irritation. In some mucous membranes fibrinous inflammations unmistakeably arise, as an aggravation, out of mucous ones; but, in the first instance (as in croup), there is nothing to be found but a mucous or muco-purulent false membrane. It is only after the lapse of a certain time that the fibrinous exudation sets in, and we can trace the transition from the one to the other. In the case of certain mucous membranes, then, it appears, that when the inflammatory irritation is slight, the product is mucus; when more violent, fibrine. Now, we know that mucus is not exuded from the blood, but that mucin, the principle of mucus, is a product of the membrane, and that it is conveyed to the surface by means of the fluid oozing through (transuding) from the blood. In the same way fibrine, instead of exuding directly from the blood, is a product of the tissues themselves. The following quotation must complete the statement of Virchow's doctrine of inflammation :—" I am accordingly of opinion, that, *in the sense* in which it has usually been assumed to exist, *there is no inflammatory exudation at all*, but that the exudation which we meet with, is essentially composed of the material which has been generated in the inflamed part itself through the change in its condition—and of the transuded fluid derived from the vessels. If therefore a part possesses a great number of vessels, and particularly if they are superficial, it will be able to furnish an exudation, since the fluid which transudes from the blood conveys the special products of the tissue along with it to the surface. If this is not the case, there will be no exudation, but the whole process will be limited to the occurrence in the real substance of the tissue of the special changes which have been induced by the inflammatory stimulus.

"In this manner, two forms of inflammation can be separated from one another; the *purely parenchymatous inflammation*, where the process runs its course in the interior of the tissue, without our being able to detect the presence of any free fluid which has escaped from the blood; and the *secretory* (*exudative*) *inflammation* (which belongs more to the superficial organs) where an increased escape of fluid takes place from the blood and conveys the peculiar parenchymatous matters along with it to the surface of the organs. That there are two different forms is clearly shown by the fact that they occur for the most part in different organs. There are certain organs which, under all circumstances, only suffer from the parenchymatous affection, and others again which in nearly every instance exhibit a superficial exudative inflammation."—P. 392.

With a great part of the above statements we cordially concur. We believe that inflammation undoubtedly begins in the elements of the tissues, and that the affection of the circulation is only secondary; we also entertain no doubt as to the identity of the essential nature of the process in non-vascular and in vascular parts; and we think that the views as to the local origin of fibrine are, to say the least, probable. But it seems to us that Virchow has taken too one-sided a view of the nature of the inflammatory process. In inflammation two processes are going on,—a process of destruction, and a process of growth. Virchow fixes his attention almost exclusively on the latter: according to him, the activity of the tissues is increased, they attract more nutritive material from the blood, and it is often extremely difficult to tell whether the process will end in the hypertrophy of the part or in its destruction. But it must be borne in mind that proceeding contemporaneously with increased growth, is increased destruction; and we think it has been proved, especially by the observations of Professor Lister,[1] that the vitality of the affected tissues is from the first diminished. We think, therefore, that the difference between a physiological and a pathological irritation is this, that in the case of the former the function of the part is stimulated, and its formative energy increased; while in the latter its nutrition is perverted, and its vitality impaired.

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[1] On the Early Stages of Inflammation. *Trans. Royal Soc.*, 1858.

The last three chapters are devoted to the consideration of the pathological new formations; and it is Virchow's object to show that the blastema doctrine is erroneous, and that, instead of it, must be substituted the law of continuous development of tissues out of one another. Virchow states that his first doubts as to the prevailing doctrine were engendered from observations as to the development of tubercle. He found that in the lymphatic glands the earliest of the scrofulous changes was an hypertrophy of existing elements; that nuclei and cells were at first very numerous, but afterwards broke up, and supplied the material of the cheesy substance. About the same time he found that the so-called typhous matter was produced in the same way. Still, he was not in a position to establish a general principle as to the formation of morbid products; for, although the doctrine of continuous development might be applied in the case of glandular and epithelial tissues, it could not be maintained when organic elements were seen to arise in situations where cells were not known to exist as normal constituents. But from the time of the discovery of the almost universal presence of cells in the form of connective tissue corpuscles, this difficulty was cleared away; and accordingly "we may," he says, "with trifling restrictions, *substitute for the plastic lymph, the blastema of the earlier, the exudation of the later writers, connective tissue with its equivalents as the common stock of germs* (Keimstock) *of the body*, and directly trace to it as the general source the development of new formations."

In illustration of this doctrine, we can only refer to the subject of suppuration. The doctrine usually maintained has been, that in a blastema, or amorphous exudation, granules arise; that these become grouped together to form nuclei, around which the cell wall is subsequently developed, at first pale and transparent, afterwards becoming thickened and granular. According to the theory of continual development, this view is, of course, untenable; and it is maintained that pus must be formed either from epithelium or from connective tissue. In the case of the epithelial tissues (such as skin or mucous membrane), the cells of the deep layers, which originally have only single nuclei, divide; the nuclei multiply; single cells have their places taken by several, which, in their turn, provide themselves with dividing nuclei. In the case of the solid organs, the formation of pus takes place in the connective tissue. The cells of this tissue enlarge, the nuclei divide, and for some time multiply excessively. This stage is soon followed by divisions of the cells themselves, and these constitute the pus-corpuscles.

In taking leave of this work, we would recommend it to the careful consideration of our readers. It may be that in some respects the theories of Professor Virchow are in advance of the results of actual observation; it is possible that some of his doctrines may be ultimately proved to be erroneous; but, whether this be the case or no, the work will remain a monument of the high ability of the author. We have no hesitation in saying, that whether we look to the value of the facts recorded, or estimate the logical ability with which these facts are marshalled into their respective places, the "Cellular Pathology" must be regarded as the most remarkable and suggestive book which has appeared in recent times.

We must not forget to thank Dr Chance for the able manner in which he has executed his task as translator, for the excellent index which he has supplied, and for the faithful copies of the original woodcuts which he has furnished.

## *Transactions of the Epidemiological Society of London.* Vol. I. Part I.

It will hardly be necessary to remark, that although the work before us is said to be the *first part of the first volume*, it is by no means the first symptom of vitality exhibited by this already distinguished Society. The weekly medical press has frequently been refreshed with instalments of the results to which the labours of its members have tended; whilst more recently the Transactions of the Society have appeared as a distinct fasciculus in the *Sanitary Review*. A prudent and praiseworthy economy led the Council of the Society to adopt these means of bringing their early labours before the public; and they are at length rewarded for their careful procedure, in being able to publish their proceedings on an independent footing. The contents of the First Part induce us to expect much valuable information from the researches of its members; and we offer our hearty congratulations to the Society upon the position which it has attained amongst our many scientific institutions.

The President's address forms the opening subject of the Transactions. It contains, in addition to a few historical remarks by the President himself, an able *resumé* of the epidemiological occurrences of the two previous years, as recorded in a paper carefully prepared by the Secretary of the Society, Dr M'William.

Following this, we have—1. A contribution on the Theory of Zymosis, by Dr Richardson; 2. The Report of the Diphtheria Committee; 3. Some Suggestions for Utilizing the Statistics of Disease among the Poor; and, lastly, some interesting Remarks on Topography and Diseases of the Gold Coast.

The last paper given in the Transactions being the only one of recent date, we confine our observations to it, hoping the reader will furnish himself with the other details of the volume by an application to the book itself.

Mr Clarke, the author of the paper entitled "Remarks on the Topography and Diseases of the Gold Coast," has been for some time resident in the locality, in the capacity of surgeon to the natives, and has consequently had great opportunities of studying the peculiarities of the people, as well as the physical constitution of the climate in which they dwell. Like all tropical countries, the Gold Coast has its wet and dry season; and the only distinctive feature in the latter climate is, that its wet or rainy season, after continuing from the end of May until September, halts for a limited period until towards the end of October, when a second but very moderate rainy season sets in, and continues for nearly a month; after which the dry season occupies, with but slight intermission, the remainder of the year—that is, up to the following May. The "smokes" or fogs which infest this locality occur between the end of July and middle of August; they follow the *heavy* rains, and are productive of much sickness. Like the sirocco of the North Coast of Africa, the harmattan exercises its baneful influence upon the inhabitants of the West. Mr Clarke describes the effects of this wind, which usually blows during the months of December, January, and February, in the following words:—

"The sun is obscured the greater part of the day, and is often only visible for a few hours about mid-day, when it appears of a deep red, causing no unpleasant sensations in the eye. The moon, which shines so brilliantly in this climate, is also obscured, and few stars can be distinctly seen. The eyes, nostrils, lips, and palate become dry and uneasy; and, when the harmattan continues four or five days, the outer cuticle often peals off from the hands and face, and, should it prevail longer, other portions of the skin are similarly affected. It exposes defects in furniture, and contracts wooden flooring so much that light is freely admitted through the seams, and sounds from above or below may be heard with greater distinctness. Neither dew nor moisture can be detected. The country at this season of the year has a wintry aspect; and the aridity of the soil is so great that the earth splits and cracks open, and, when walked upon, conveys the ringing sound so perceptible in clear, frosty weather. The branches of the orange and lime trees droop, and the leaves become flaccid, and wither. The grass is dry, withered, and brittle, and the natives take this opportunity to set it and the jungle on fire. Water is rendered deliciously cool—so cold, indeed, that in some persons it causes a momentary aching in the teeth."

Curiously enough, the author regards these parching winds as not only harmless, but positively beneficial to health. He says,—"The harmattan winds, so far from being injurious to life, are, in my opinion, very salubrious, and are much enjoyed by many Europeans who have lived long on the Coast, as they find these winds very bracing" (!); "but persons recently arrived, on the contrary, generally find that they cause a dryness of the skin, and corresponding temporary functional disturbance of the liver. I observed that its effects were most beneficially felt by persons who had previously been suffering from dysentery, remittent or intermittent fevers, and that they then more quickly recovered."

The sea-breezes prevail, with but little interruption, during the summer season, and mitigate the otherwise intense heat. In this circumstance, Gold Coast bears favourable comparison with Sierra Leone, which is sheltered from the sea. The author gives a graphic description of the *genus* inhabiting the Gold Coast country; the peculiarities of their customs and manners; the nature and condition of their habitations, and of the evils arising from the want of a due administration of sanitary laws. Afterwards, we find a few general remarks on the natural products of the country, together with the modes in which the natives (female as well as male) employ medicines and perform the minor operations in surgery.

With respect to the evil effects produced by the climate of Gold Coast upon Europeans, Mr Clarke's experience seems to modify existing opinions. He believes it to be less injurious than those of Sierra Leone and Gambia; and he states that many of the evils which arise from a residence on the Coast result from the imprudent habits of the individuals themselves, and might, with a moderate care and attention to well-known hygienic laws, be altogether avoided.

The author's experience of the interior will be read with much interest. He gives the following brief outline of it:—

"Having travelled through several parts of the country, I beg to record my impressions; and, first, I would observe the remarkable difference which exists in the general features of the windward and leeward divisions of the Gold Coast, in that by far the greater extent of the former is either clothed with wood or jungle, whereas tracts of the latter (which, however, includes a part of the Winnebah or Agoonah district in the windward division) consist of vast plains, beautifully interspersed with trees and shrubs, and carpeted with grass, and adorned with a variety of flowers. Indeed, the country about Winnebah cannot be exceeded in beauty or variety, presenting the most perfect resemblance to a domain laid out with the utmost art, the elegant clumps of trees which adorn it giving a park-like appearance to the surrounding country. The country about Accra, Christianbourg Castle, and especially extending northward of Pram Pram and Ningo, is pastoral and luxuriant to a high degree. The air in this open and champaign country is likewise cooler and more invigorating to Europeans than in the windward division, which is extensively wooded. Game is also abundant—hares, deer, antelopes, quail, partridge, bustard, and guinea-fowl stocking it in great numbers. The windward division, on the contrary, is covered to a great extent with tracts of magnificent forest trees and copse, rendered impenetrable by masses of underwood and plants with prickles, which grow between the trees and interlace them together. Lianas coil around and festoon many of the trees, frequently crossing one another like net-work, winding themselves in all directions. These fibrous plants vary in thickness from a thin cord to that of a cable; climbing to the summits of the trees, they stretch to those adjacent, or, depending from them, swing idly in the wind, the tortuous pathway being alone trodden by the foot of man. Even the cheering glades which open up the forests at several points, relieving and delighting the eye, tired of the wearisome sameness of the route, are uninhabited; but many of the villages and hamlets in the rural districts are built in the midst of the forests, sufficient land being cultivated around them to meet the wants of the people. A great difference is, however, perceptible as to the extent of land cleared and under cultivation in the different parts of the Gold Coast, more land being left fallow in some years than in others, when the natives are stimulated to labour by the prospect of a market for their produce; otherwise, they, in general, do not care to plant more than is necessary for their wants."

*The Climate of Brighton.* By WILLIAM KEBBELL, M.D.
London: Longmans.

THIS is an abridgment of Dr Kebbell's former work. The present pamphlet is confined, with questionable advantage, to the general consideration of Brighton alone. The author has evidently made accurate meteorological observations, and has judiciously availed himself of the labours of others.

# Part Third.

## PERISCOPE.

### MEDICINE.

#### TREATMENT OF EPILEPSY BY CURARE (WOORARA). BY DR THIERCELIN.

The trials which have been made of curare in the treatment of tetanus are well known; and although the results have as yet proved inconclusive, they hold out sufficient encouragement for further experiments in the same direction, conducted with the prudence and caution which such researches require. Dr Thiercelin has had the idea of testing the effects of the same medicine in the treatment of epilepsy, in two cases under his care. The first of these was a young man, aged 23, affected with congenital hereditary epilepsy, who had spent four years in the Hospice at Charenton. Looked upon as incurable, he had ceased to receive any medical treatment for about two years. The fits varied from 15 to 20 each month; some of these consisted of simple vertigo, but the most of them were the *haut mal.* The other case was a young girl of 17, epileptic for eight years. The attacks, which during the first year had the form of vertigo, afterwards took on the character of the *haut mal*, but occurred only during the night for two years. For the last five years the fits came on day or night, and were marked by violent convulsions, piercing cries, râle in the throat, foaming at the mouth, etc. Their number for the last year was at the rate of 28 to 29 a month. This patient had been treated by a specialist for three years. Under the influence of the curare, administered in doses varying from 3 to 5 centigrammes (gr. ½—gr. j.) each day, by means of a blister in full suppuration, Dr Thiercelin found, in the course of two months, the attacks diminish in number, in the one case to 5 in place of 15 or 20, and in the other to 8 instead of 28 or 29, during the last month. The severity of the convulsions was also lessened in a very marked degree; and the general condition of the patients was very perceptibly improved. Dr Thiercelin adds, that, while employing the curare, he had not on this account interrupted the treatment previously prescribed, and which consisted principally of valerian, cold aliments, etc. At the end of the second month, the supply of curare being exhausted, the fits returned in the following month (February) with nearly their former frequency, viz., 15 a month in the one case, and 24 in the other. A new specimen of the curare, consisting of 15 grains, having been procured, the treatment was resumed in the young girl. In the space of ten days there were only three paroxysms, coming on during the night, and of slight intensity. On the eleventh day the medicine was done; there were three fits on the following night, and the convulsions resumed a certain intensity. On the twelfth day, Dr Thiercelin sent the parents 1 gramme (15 grs.) of the drug, divided into 14 doses, to be administered in 14 days, each dose being sufficient for three dressings. After the second dose, the patient spent twelve days during which there were observed only two nocturnal attacks, of slight intensity, and under the average duration.

These two cases are, unfortunately, incomplete; but, although insufficient to enable us to pronounce on the value of curare as a means of treatment in epilepsy, they nevertheless have a certain importance in consequence of the successive proofs and counter-proofs, which cannot leave any doubt as to the influence of the curare in the marked amendment of the disease in these two cases. It is to be regretted that the deficiency of the drug compelled an interruption of these trials before more complete results were obtained.—*Compt. Rend. de l'Acad. des Sciences*, Nov. 1860; *Bull. Gen. de Ther.*, Dec. 1860.

### ON THE ARSENIATE OF SODA IN SCROFULA. BY DR BOUCHUT.

The manifestations of the scrofulous diathesis are all exceedingly inveterate, and the treatment directed for their cure is only too often unsuccessful. All forms of scrofula, however, are not equally obstinate. The tertiary forms, which appear as tuberculosis, are generally incurable; of the other forms, whether primary or secondary, those which affect the bones are especially tenacious and of long duration; and, in truth, it is only over the mucous, glandular, and cutaneous manifestation of scrofula, that therapeutics can exert any decided power. The author has used, in turn, all the medicines usually reputed anti-scrofulous: iodine, mercury, iron, baryta, bromine, extract of walnut leaves, cod oil, arsenic, etc.; but, of all these agents, the arseniate of soda has appeared to him to be, under the circumstances which he describes, the most energetic and the most efficacious. In suitable doses, arsenic is one of the best *tonics* and *corroborants* we possess; it is only in too large doses, or when its use is too long continued, that it deserves to figure as an *alterative*. As a tonic it is an admirable succedaneum of iron, quinine, and cod-liver oil; and is of great service in the majority of organic and nervous cachexiæ. In the scrofulous cachexia it is an excellent remedy; and under its influence children ordinarily regain their appetite, strength, and colour. In such cases there is amelioration only; but the cases where it cures are those in which the diathesis has not as yet produced a cachectic condition, and where the local manifestations are superficial and confined to the skin, the mucous membranes, and suppurated lymphatic glands. Beyond these, in tuberculosis and the diseases of bones, it is only a good palliative. But, although thus limited, the therapeutic effects have considerable importance. It is no slight matter to be able to abridge the duration of a coryza, an ophthalmia, or the suppurations of glands, cutaneous ulcers, otorrhœas, leucorrhœas, etc., which depend upon the scrofulous constitution. The author possesses a number of facts relating to such cases, as well as to scrofulous perforation of the palate, reputed syphilitic, suppurating cervical glands (formerly called *écrouelles*), etc. The result in all of them was the same; a rapid cicatrization of the sores was always observed. The following are some examples:—

Obs. I.—A female child, aged 10, entered the Hospital Ste. Eugénie on 3d June 1858; born of scrofulous parents; pale, thin, and weak, with an open scrofulous sore under the chin, discharging an abundant suppuration; below the angle of the jaw, other enlarged glands, not suppurated; appetite and digestion natural. Arseniate of soda was prescribed in increasing doses, from 5, 10, 15, to 20 milligrammes (1-14th to 1-4th grain) in a julep. Taken from July to December, the medicine produced no disturbance in the digestive organs. On October 15 the child was completely cured, and was dismissed on December 27. The tumours of the neck had disappeared, and there remained a solid cicatrix of good appearance under the chin.

Obs. II.—Girl of 13; two large scrofulous ulcers in the neck, with abundant suppuration, and the skin undermined. Arseniate of soda in increasing doses. Cure in three months.

Obs. III.—A girl of 10, suffering from osteitis of the phalanges of the big toe, onyxis, and suppuration of the matrix of the nail; treated with arseniate of soda internally, and foot-baths of chlorate of potash. In three months the wound had completely healed, although there still remained some swelling of the toe, and the skin was red and tender. The child had gained colour, had a keen appetite, and had become stout and plump.

The fourth case, a girl of 11, affected with lichen, and presenting numerous glandular enlargements and fistulous ulcers under the jaws, had a chronic abscess of the chest, which had been punctured and injected with iodine. She had been treated with cod-liver oil for three months, but had lost flesh, and the abscesses continued to discharge an abundant suppuration of an unhealthy character. On May 15 the arseniate of soda was commenced. On July 15 the abscesses were almost cured; and the child had a fresh, healthy colour, and had gained flesh. On September 1 the abscesses on the neck and chest were completely closed. The cure continuing, the child was dismissed, November 8. Since that date all the scrofulous children presenting superficial cutaneous affections in M. Bouchut's wards have been treated in the same way, and the result has always been favourable.

In the case of a girl, aged 11, affected with swelled submaxillary glands, and large scrofulous ulcers extending from the ear downwards under the chin on both sides, the improvement began after a fortnight's treatment with the arseniate of soda, and she left the Hospital cured in four months.

Another girl, the subject of tinea tonsurans and osteitis of the big toe, had been ill for a year, and entered the Hospital, July 8, 1858. The general health was pretty good; with the exception of some paleness, there was no functional disorder. Epilation, lotions of corrosive sublimate, applied to the head; arseniate of soda internally; sulphurous baths. In November 1859 the sore of the foot had completely cicatrized; but the tinea tonsurans had spread. The epilation was continued, and she was dismissed cured on 15th October 1860.

In all these cases the arseniate of soda was begun in doses of 5 milligrammes (1-14th grain), and increased at the end of a few days to 10, 15, and finally 20 milligrammes (¼ grain). Beyond that dose, symptoms of gastralgia, vomiting, and diarrhœa are apt to come on, and should be guarded against. It may be given in gum julep, in Bordeaux wine, in syrup of cinchona, or syrup of gum. The following formula may be employed, and the medicine left in the charge of families, for use during several weeks:—Syrup of cinchona, 300 grammes (℥x.); arseniate of soda, 5 centigrammes (gr. j.): one or two teaspoonfuls each day; each teaspoonful containing about 1 milligramme ($\frac{1}{70}$ grain) of the arseniate of soda. In this dose, and with the precaution of increasing it gradually, the arseniate of soda presents no danger. Its effects are, to increase the appetite and produce a richer sanguification, manifested by a ruddy colour of the skin, muscular energy, and an unmistakeable appearance of health. Such results, says the author, are not to be despised in the case of scrofulous subjects, pale, emaciated, and exhausted by long suppurations and mucous discharges; and it is on these grounds that he recommends the arseniate. He does not propose it, however, as a specific, but only as a tonic or corroborant, which stimulates the appetite and imparts increased activity to the molecular nutrition of the tissues. In scrofulous constitutions, it is the slowness of the movements of nutrition, and of the exchange of the circulating materials, which gives the diseases their peculiarly chronic character. In this respect the arsenical medication is useful, as perhaps the cod-liver oil is also, by stimulating nutrition; and the results obtained should induce practitioners to have recourse to it. It must be noted, however, that the arseniate of soda is suitable only in scrofulous diseases of the cutaneous, mucous, and glandular textures. Its efficacy is doubtful in diseases of the bones; and it is only a palliative in the case of tertiary scrofula, that is, in tuberculization.—*Bull. Gen. de Ther.*, Nov. 1860.

### MILIARY TUBERCLE IN THE SUBSTANCE OF THE HEART. BY DR JULIUS KLOB.

On the 18th of October 1860, I examined, in Professor Rokitansky's Pathological Institution, the body of a man, twenty-four years of age, who had suffered from articular rheumatism, and ultimately died with symptoms of aortic insufficiency, and hypertrophy of the heart. On *post-mortem* examination, I found insufficiency of the aortic valves, with eccentric hypertrophy of the left ventricle; slight hypertrophy of the right side of the heart; the remains of old myo- and endo-carditis, in the form of well-marked tendinous lines in the substance, especially of the papillary muscles, of the left ventricle, and of fibrous patches adherent to the endocardium; adhesions of the pericardium through its entire extent by means of moderately loose, slightly œdematous connective tissue, which in some places was a line or more in thickness. There were also amyloid degeneration of the spleen (sago-spleen) and kidneys, a slight curvature to the right of the thoracic portion of the spinal column, cheesy degeneration of the enlarged retro-peritoneal lymphatic glands, and, finally, miliary tubercle in the substance of the heart. It is my object at present to describe more minutely the last-mentioned lesion.

In the muscular substance of the heart, particularly of the left ventricle and of the septum, could be recognised a considerable number of scattered nodules of a rounded or oval form, scarcely so large as millet seeds, in some cases pale-grey and translucent, in others of a pale-yellow colour. These bodies were met with partly in the middle, but more abundantly in the innermost layers of the wall of the heart, in the papillary muscles, and in the trabeculæ. The same pale-grey bodies could be seen shining through the endocardium, the superjacent membrane being perfectly normal.

On examining microscopically fine sections of the muscular substance, these little nodules were found to be embedded between the muscular fibres; they followed, for the most part, the course of the fine capillaries; they consisted of irregular accumulations of roundish, moderately large ($\frac{1}{3300}$ to $\frac{1}{2500}$ inch), naked nuclei, with a certain number of nucleated cells; in the case of the yellow nodules, the cells were undergoing fatty degeneration, and there was also free fat in the form of minute drops, and a very finely molecular matter. On closer examination, the growth of the nuclei from the cellular sheath of the fine vessels could be distinctly recognised. With regard to the relation of the muscular fibres to these nodules, I have already mentioned that the latter appeared to lie *between* the fibres, and had consequently been developed from the connective tissue which accompanies the minute blood-vessels. Nevertheless, the bundles of muscular fibre in the neighbourhood of the individual nodules presented a finely granular appearance, which disappeared slowly under the action of acetic acid, while a few fat globules, and the pigmentary granules so often met with in hypertrophied muscle, remained unaltered.

Virchow has recorded a case of miliary tubercle of the voluntary muscles in an epileptic individual, who ultimately became idiotic, twenty-seven years of age, in whom, with the exception of cheesy degeneration of the cervical lymphatic glands, there was no appearance of a tubercular lesion (*Würzburger Verhandlungen*, ii., p. 168, and *Gesammelte Abhandlungen*, p. 998). Recklinghausen also describes a case of miliary tubercle of the muscular substance of the heart in a man of twenty years of age, in whom was also found miliary tubercle of the lungs, pleura, liver, spleen, kidneys, thyroid gland, and prostate (*Virchow's Archiv.* Bd. xvi., p. 172).

With the exception of these cases, I cannot refer to any other recorded observation of this kind; and, so far as I am acquainted with the records of our institution for the last twenty years, I do not recollect to have either seen or read of a similar case. It follows, accordingly, that the lesion, in such an extended form as described in the above case, is one of the greatest rarity; in a less advanced stage, where only a few nodules might be present, it might readily escape observation, although we know that in this form of tuberculosis a large number of nodules is generally met with.

The combination, in the above case, of acute tuberculosis with the remains of an old inflammation of the muscular substance of the heart, is worthy of being borne in mind, although the two lesions appear to have had only a casual connection. We should also note the appearance of the disease in a hypertrophied heart; and, finally, the circumstance that the miliary tubercle of the heart was the only manifestation of the tubercular disease, while in general we meet with miliary tubercle in several organs simultaneously.—(*Zeitschrift der K.K. Gesellschaft der Aerzte zu Wien*, 1860, No. 49.)

### FREE BODY IN THE CAVITY OF THE PERICARDIUM. BY DR JULIUS KLOB.

On the 27th of October 1860, I examined the body of a journeyman carpenter, thirty-nine years of age, when the following appearances were met with:—Intermeningeal hæmorrhage, most abundant at the base of the brain; insufficiency of the mitral valve, with hypertrophy of the right side of the heart; indications of old pericarditis, and a free body in the cavity of the pericardium. As the pathological appearances were interesting, I add a few details. At the base of the brain, between the arachnoid and pia mater, commencing at the optic commissure and extending back to the pons Varolii, was a dark-red clot, in some places three lines in thickness; from this a layer of firm fibrin, of a yellowish-red colour, had separated, which surrounded in an especial manner the corpora mamillaria and the crura cerebri, and completely enveloped the origin of the left oculo-motor nerve. (It is to be noted that there was divergent strabismus during life.) The basilar artery passed through the middle of this clot, and adhering pretty intimately to its lining membrane was a dark brownish-red fibrinous clot, which completely obstructed it from its commencement to its division. The arteriæ profundæ cerebri and the communicating branches were perfectly normal. The lowest layer of the pons was softened, of a pale-yellow colour, and contained numerous hæmorrhagic extravasations, of the size of pins' heads. No laceration or aneurismal dilatation of any of the arteries could be recognised, although the vessels were most minutely examined. On examining the heart, fibrinous vegetations were found adherent to the mitral valve; and, accordingly, it seemed to be pretty obvious that the whole lesion in the brain was the result of an embolic obstruction, which had become impacted at the point of division of the basilar artery, at which point, moreover, the obstruction was thickest.

In the cavity of the pericardium were three ounces of pale-yellow serum; and floating perfectly loose, was an oval, cartilaginous-looking body, of a bluish-white colour, and of the size of a pea. This body was everywhere perfectly smooth, and contained a pale-yellowish nucleus in a state of fatty degeneration, around which it appeared to have been developed in a concentric manner. The pericardium was universally coated with pseudo-membranous bands and layers of connective tissue; on the anterior wall of the right ventricle were large, superficially smooth, cartilaginous patches, of half a line in thickness. Pseudo-membranous bands crossed over from the origin of the pulmonary artery to the left auricle; and from the latter, attached by a short pedicle, hung a second body, smooth and hard, in every way similar to the other, and rather larger than a pea. At some places there projected from the pericardium short villous processes of connective tissue.

Very few similar cases have been recorded. Bidder alludes to the occurrence of such bodies; and Rokitansky has mentioned a case, in which numerous "fibrinous concretions," of the size of almonds, were found free in the pericardium.—(*Zeitschrift der K. K. Gesellschaft der Aerzte zu Wien*, 1860, No. 49.)

## THERAPEUTICS.

### CHLORATE OF POTASH AND GLYCERINE AS A TOPICAL DISINFECTANT.

Experiments instituted at Bicêtre, under the direction of M. Martinet, have demonstrated remarkable disinfecting properties in a mixture of chlorate of potash and glycerine according to the following formula:—Chlorate of potash in powder, 2½ drachms; glycerine, 3 ounces; mix. This mixture has been shown, by repeated trials, to present,—1st. A marked disinfecting power, due perhaps to the change which it produces in the secretion, and the mode of action of the wound; 2d. The property of giving the pus, even when of a serous kind, a greater consistence, often like cream. This result is perhaps, according to M. Martinet, a physical effect of the affinity of glycerine for water, which it subtracts from the pus; but is partly due to the favourable modification which is produced in the suppurating surface. He is inclined to think, that the preparation of glycerine and chlorate of potash may, by thickening the pus, tend to prevent the occurrence of purulent or putrid infection, which generally takes place in connection with suppuration of a serous and unhealthy character. An advantage of the glycerine is, that it prevents the dressings from sticking to the edges of wounds. According to M. Martinet, the glycerine chlorate of potash is not adapted for wounds or sores of a bright red colour, nor for those that are recent or of healthy appearance.—(*Rep. de Pharmacie—Bull. Gen. de Ther.*, Nov. 1860.)

### CELANDINE AS A VULNERARY.

The ancients made great use of this plant; and it is probably unjustly neglected at the present day, since it possesses active principles which afford the presumption of unequivocal therapeutic properties, and require only the application of exact chemical experiment. Dr Sacc, chemist at Wesserling, has lately directed the attention of practitioners to the topical effects of the plant. According to him, the action of celandine as a vulnerary is greatly superior to that of arnica. In the south, the chelidonium majus is universally employed to prevent or subdue traumatic inflammations; and that, says M. Sacc, with a certainty which he has not witnessed in any other vulnerary. At Marseilles, where it is always found in full vegetation, it is the popular cure; and M. Sacc quotes several cases showing its excellent topical effects. In northern countries, he recommends the preparation of an alcoholic tincture of the leaves. Unless we are mistaken, however, the chemical analyses of MM. Chevalier and Lassaigne have proved that the root is more rich in the active principles; and it would therefore be preferable to employ that part of the plant.—(*Echo Medical Suisse—Bull. Gen. de Ther.*, Nov. 1860.)

### TINEA FAVOSA TREATED BY THE CARBONATE OF COPPER.

The salts of copper are becoming gradually introduced more largely into practice; and the above new application of them has been brought forward by M. Huet, physician to the Penitentiary for Juvenile Delinquents. A great number of children enter that institution affected with tinea favosa, and the good effects obtained in these cases, by the trial of his mode of treatment, has induced M. Huet to recommend it strongly. It consists as follows:—The head is carefully cleaned by means of unctuous cataplasms, and, when the crusts have been completely detached, it is shaved. The following ointment is then applied: Carbonate of copper, 2½ drachms; purified axunge, 15 ounces. After numerous trials, M. Huet considers this ointment as the means which cures porrigo with the greatest rapidity. Sometimes it is necessary to suspend the medicine, and return to the poultices for a certain time, before resuming the use of the carbonate of copper.—(*Repertoire de Pharmacie—Bull. Gen. de Therap.*, Jan. 1861.)

### ON THE GRAPE CURE. BY DR ARAN.

Grapes were used therapeutically by the ancients; but the special application of them to the treatment of certain classes of disease dates only about twenty or thirty years back, and is confined, as is well known, to certain localities of the Continent. The method is thus described:—The grape cure, as understood in Switzerland and Germany, consists in making grapes the basis of the alimentation during an interval of time extending from two to five or six weeks. The cure itself may be strong or mild. In the *strong* cure, the arrangements are as follows: The patient rises very early in the morning, and, after having swallowed a large glass of cold water, he goes, if he has sufficient strength, into the vineyard, where he eats one or two pounds of grapes, pulled from the vines, and still wet with the morning dew; these he eats without bread, or, if his stomach has difficulty in supporting the grapes alone, he may take a small roll of half an ounce to two ounces. After this repast, the patient, according to circumstances, is either subjected to frictions over the whole body, or he takes a bath, or he engages in gymnastic exercises, or he simply takes a walk. At eleven o'clock, another repast, consisting of three or four pounds of grapes; after which, again a walk; and at two o'clock a frugal meal, composed chiefly of herbs, with grapes for dessert. In the afternoon, another repast of grapes, of three to four pounds. Lastly, before going to bed, from one to three pounds of grapes are taken, with some very light food. The *mild* treatment differs from the preceding, or strong cure, only in the smaller amount of grapes which the patient takes, the quantity being reduced, according to the case, to one-third or one-fourth; and, besides, a little meat, not too fat, is allowed at the mid-day meal, and a cup of coffee or chocolate in the morning. In both kinds of cure much stress is laid upon the regimen. Patients are strictly forbidden to take milk, or food made with milk; all kinds of fat meat, eggs, vegetables, and every kind of fruit except the grape, are prohibited; the day must be regularly employed, with moderation both in drinking and eating; no excess of any kind is permitted; and frequent baths are taken. When the cure is finished, patients should continue the same kind of life during several weeks—eight or ten; which constitutes what the Germans call the after-cure (*Nach-cur*). The grape used must be perfectly ripe; and different kinds are used in different countries—the chasselas grape in most parts of Germany and Switzerland, the muscatel grape in the southern countries. The season best adapted for this treatment is the after-season, the middle or end of October, not only because at that time the grape is perfectly ripe in favourable years, but also because the air is then cooler and more pure, and the patients are less exposed to the heat of the sun when they are out in the vineyards, and because the temperature admits of long walks and gymnastic exercises. The localities selected for these special modes of cure, of which the number is very considerable at the present day, are, for the most part, admirably chosen, both as regards the purity of the air, the beauty of the situation, and the exposure, which shelters them from sudden chills of temperature. We have only to mention Veytaux, Montreux, and especially Aigle, on the borders of the Lake of Geneva; on the banks of the Rhine or its vicinity, Armenhausen, Bingen, Boppart, Laubbech and Rüdesheim, Saint Goar; Méran in the Tyrol, etc. All acquainted with these countries will understand how many favourable influences are at work, in addition to the simple "grape cure." Theoretically, the grape cure has been attempted to be explained on the same chemical principle as the whey cure,—viz., that, containing very little nitrogen, it was adapted for diseases with predominance of that element. But this explanation rests on no ascertained grounds. The grape cure has been much vaunted in chronic diseases, phthisis pulmonalis, scrofula, gout, diseases of women, diarrhœa, and (what appears very opposite) abdominal plethora, hemorrhoids, hypochondria, etc. M. Aran is of opinion that, as a kind of aliment of very easy digestion, the grape cure may be serviceable in many diseases, but especially in dyspepsia, and other affections of the digestive organs, where it is important to give rest to the intestinal canal, while furnishing, at the same time, a kind of diet sufficiently nutritious and slightly stimulant. The hygienic conditions of the localities are, also, undoubtedly favourable for most chronic diseases; and the author thinks that the plan might with advantage be tried in France, so as to ascertain its real value. In the meantime, he is not disposed to allow any specific influence to the grape diet in the cure of these cases, and recommends a cautious reserve. Fashion, he adds, has had more to do with it than science; and what she has raised up one day, she may overturn the next.—(*Bull. Gen. de Therap.*, Oct. 1860.)

# Part Fourth.

## MEDICAL NEWS.

### MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XL., 1860–61. MEETING IV.

*Wednesday, February* 6, 1861.—BENJAMIN BELL, Esq., President of the Society, in the Chair.

#### I. ERECTILE TUMOUR OF THE LEG.

*Mr Spence* showed a preparation of an erectile tumour in the substance of the *flexer longus pollicis* of the leg. The subject of the case was a girl, who, in coming down stairs, felt something snap in her leg. A swelling formed, and gradually increased in size. When she came under observation, a pulsating tumour was found in the leg. On compressing the femoral artery, the tumour became flaccid, and the pulsation ceased; when the pressure was removed, the tumour filled immediately, almost with a bound. At this time Mr Spence and those who saw the case thought it was an example of that rare disease, aneurism of the posterior tibial. Ligature of the posterior tibial artery was determined on. On performing the operation, the posterior tibial was found to be very small; and as a ligature placed on it made no alteration in the pulsation of the tumour, the peroneal artery, which was the larger vessel in this case, was likewise tied, and also the distal portion of the posterior tibial near the ankle. Even this produced little alteration on the tumour, which was then recognised to be an aneurism by anastomosis; and, as it continued to increase, amputation was performed. Mr Spence observed, that the preparation before the Society showed that none of the arterial twigs supplying the tumour were of large size; it was only when they were within it, that they became dilated and varicose. The reason why the tumour so soon became flaccid when the femoral artery was compressed, was explained by the enormous size of the veins, which must have emptied the tumour almost at once, as soon as the arterial supply was temporarily arrested.

### II. CARIES OF THE HEAD OF THE HUMERUS.

*Mr Spence* showed a specimen of caries of the tuberosity of the humerus, and of incipient caries of the head of the bone, on account of which the head of the bone had been excised a few weeks ago. The preparation showed well how disease of the bone leads gradually to ulceration or absorption of the articular cartilage.

### III. MEDULLARY TUMOURS DEVELOPED IN THE GREAT PECTORAL MUSCLE, AND IN THE AXILLA.

*Mr Spence* showed a tumour which he had recently removed from the breast and axilla of a man. A year or eighteen months ago the patient first became aware of the presence of a tumour, which gradually increased in size, but continued of very firm consistence. Latterly another tumour made its appearance; it was situated more deeply than the other, was more elastic, and was in the neighbourhood of the clavicle. This tumour grew more rapidly than the other; and when Mr Spence saw it, he had no doubt of the malignant character of both growths, although the patient did not present the appearance of a person suffering from malignant disease. From its feeling and position, Mr Spence was also of opinion that it was developed in the substance of the greater pectoral muscle. When the tumour was removed this was found to be the case, at least, in regard to the larger tumour; the mamilla was quite sound; the smaller mass lay over the clavicular vessels; the dense coraco-clavicular fascia was absorbed, so that when the tumour was removed the vein was found exposed as by a dissection. Very little blood was lost in the operation.

### IV. TYPHOID FEVER.

*Dr Haldane* showed portions of the intestines from the body of a young man who had died of typhoid fever. Very numerous ulcers were found in the ileum, affecting both the solitary and agminated glands. A brownish slough was still adherent to most of the ulcers; but, from a few patches in the lowest part of the ilium and in the cœcum, the slough had separated, and the characteristic ulcer with smooth base and sharp edges was left. The mesenteric glands corresponding to the affected portion of the intestine were enlarged, and of a deep purple colour. The spleen was enlarged and softened, and contained a small mass of yellow fibrinous deposit. Dr Haldane remarked that this form of fever was rare in Edinburgh. A few well-marked examples had occurred in the wards of the Royal Infirmary during the present session, but this was the only case in which a *post-mortem* examination had afforded an opportunity of seeing the characters of the intestinal lesion.

### V. THORACIC ANEURISMS.

*Dr Haldane* showed preparations of two aneurisms in which the relations of the tumours were peculiar. In the *first* specimen, a sacculated aneurism, of the size of a bantam's egg, arose from the posterior wall of the aorta, immediately above the semilunar valves, communicating with the vessel by an aperture of the size of a shilling. Almost immediately above this, the arch of the aorta opened out into a cylindrical aneurism, from the lower part of which a secondary pouch projected downwards. The pulmonary artery at its origin lay upon the first-mentioned aneurism; and the right division of the artery, where it wound round the aorta, was closely applied to the wall of the sac. The secondary pouch from the cylindrical aneurism came very near the first pouch; and, consequently, the right branch of the pulmonary artery was so compressed between the two that its canal was almost obliterated. The result was, that very little blood could enter the right lung; and the individual died from slowly supervening asphyxia, the result of imperfect oxygenation of the blood.

In the *second* preparation, the innominate artery was seen to be dilated into an aneurismal pouch, larger than a hen's egg. The opening by which it communicated with the aorta was as large as half-a-crown. The sac had grown upwards, and the right carotid and subclavian arteries (of normal size) were given off from about the middle of its posterior wall. The trachea was closely applied to the left wall of the sac, and was compressed and markedly twisted. The patient had died from exhaustion.

### VI. DISEASE OF HIP-JOINT.

*Mr Edwards* showed three specimens of changes in the hip-joint. 1. An example of what appeared to be *true* bony anchylosis, a condition somewhat less commonly met with than many seem to think.

2. Another case of what might be called bony anchylosis; but, on careful examination, a very narrow fibrous bond of union may be seen.

3. A case in which both head and neck of the femur and the cotyloid cavity had disappeared. There were no external marks of disease in this subject, and it was probably one of chronic rheumatic arthritis.

### VII. EXOSTOSIS OF FIBULA.

*Mr Edwards* also showed an exostosis, the size of a Jersey pear, partly osseous and partly cartilaginous, which he had removed from the fibula.

### VIII. DISEASE OF THE STOMACH.

*Mr Edwards* also exhibited the stomach taken from a child one month old, a patient of Dr Sidey's. There were evidences of severe abdominal inflammation, and an abscess lay over the cardiac end of the stomach, bound in by bands of lymph. This portion of the stomach had undergone solution, and portions of the child's food were lying in the peritoneal cavity *beyond* the bands of lymph. Was this *ante-mortem* dissolution?

### IX. SPINA BIFIDA.

*Mr Edwards* showed a preparation of spina bifida, situated in the sacral region; the cauda equina ended in loops in the cavity; the skin and membranes had ulcerated; and the child had died in the second week, from convulsions.

### X. ABSORPTION OF ARTIFICIAL PIGMENT.

*Mr Edwards* drew the attention of the Society to two microscopic specimens of pigment deposited in the axillary glands of a male subject, who had been tattooed on both arms. That on the left had faded; but still the very laudable sentiment, "Let Glasgow flourish," could be distinctly read. On this side the axillary gland, nearest the humerus, was a dark-green in one half, and the usual colour in the other. The darkness was found to depend on particles of colouring matter, and illustrated Professor Virchow's remarks, which would doubtless be familiar to the Society.

### XI. MAGNETO-ELECTRIC MACHINE.

*Dr Wright* exhibited the magneto-electrical machine of Messrs Parkes of Birmingham, at the request of Mr Lennie, optician. He stated that its construction was similar to that of the original machine of Clarke, over which, however, it possessed some advantages. He considered that this instrument, from which electricity was obtained by the aid of permanent magnets, would be especially useful in cases of urgency, as it required no acids or voltaic apparatus to work it, and was therefore always ready for instant use.

### XII. EXCISION OF SUPERIOR MAXILLA.

*Dr Watson* exhibited a superior maxilla and malar bone, which he excised a fortnight ago from a female patient. The disease was a medullary growth, apparently commencing in the periosteum of the bone, and extending inwards towards the antrum, and upwards involving the malar bone. The history of the case was somewhat curious. The patient, when first seen, in the month of July of last year, had a swelling occupying the infra-orbital region, about the size of half a filbert. This extended downwards rapidly; and a few days afterwards, as fluctuation was distinct, Dr Watson opened this small collection of pus. Thereafter another fluctuating swelling formed lower down, the crackling wall of which showed that it was formed from within the antrum. This, too, was opened, and its muco-purulent contents evacuated. But as the discharge persisted from the opening at the end of a fortnight, three stumps were removed, and a stimulating injection was thrown into the antrum, which escaped by the nostril. The opening speedily healed, but a considerable amount of thickening still remained. The patient was accordingly recommended to go to the country for a time, for the improvement of her health. On returning, about three weeks ago, the tumour had attained its present dimensions, and its characters were unmistakeable. In the operation, as the malar bone had to be removed, the single incision from the angle of the mouth to the zygoma was employed, and the operation otherwise performed in the ordinary way. The disease was found to be completely limited to the superior maxilla and malar bone. This feature in the morbid anatomy of medullary tumours occupying the superior maxilla was the one which made the case interesting, and which had led Dr Watson to exhibit it to the Society; for, as the members were probably aware, the usual commencement of such growths was from behind forwards, so that, by the time they made any appearance externally, they had advanced so far backwards and upwards towards the sphenoid and ethmoid as to render operative interference useless. Here, however, the disease had commenced upon the surface of the superior maxilla, and advanced principally outwards; the portion of the tumour which had been developed towards the antrum being very small, as might be seen through the opening in the upper wall of the antrum, which Dr Watson had removed on purpose to show this portion of the growth. The diagnosis of the characters of the enlargement in its early stage had been rendered difficult from the complication of abscess of the antrum. When, however, every source of irritation had been removed, and the case allowed to follow its own course, the true nature of the disease became obvious. As regarded the progress of the case, the patient was now up and well, and the cavity had contracted so much that it could hardly contain a piece of lint the size of a walnut. For a time there had been some confusion of vision with both eyes, from their level being slightly different, owing to the want of support of the floor of the orbit on the side upon which the jaw had been removed. This was obviated at first by employing some stuffing of the cavity; and now the contraction of parts served to afford all the support which was required.

### XIII. INSTRUMENT FOR DISLOCATIONS.

*Dr Watson* exhibited an instrument, which he owed to the kindness of Dr Keith, of Aberdeen. The instrument was invented some years ago by a student of the Aberdeen Infirmary, who, following up a suggestion of Dr Keith's, that a great desideratum in reducing dislocations was some means by which the extension force could be suddenly slacked off so as to admit of the muscles asserting their influence, to rectify the displacement. This instrument most completely fulfilled the indication of "holding fast as long as was desired, and of letting go at once when required." It consisted of an ellipse of steel, which could be attached to the hook of one of the pullies of the extending tackle, by a hole in an arm projecting from and continuous with one side of the ellipse. The ellipse itself was thus composed of two pieces hinged together at one end, so that the other extremity could open or close like a pair of "*shears*" or compasses. Near the open end of the moveable arm of the ellipse was a hook, which, when the two arms were in contact, caught upon a pin projecting from the side of the other arm, thus binding them firmly together; so that, unless the hook was displaced from its hold upon the pin, the ellipse of steel remained complete, and the ring, which might be placed within its curve and hooked on to the "laque," or extending straps, could not escape from its embrace. In order still further to keep all firm, and prevent any lateral displacement of the hook, a side-spring pressed it flat against the arm upon which the pin was fixed. So arranged, the instrument could hold fast against any force which was not sufficient to bend the hook or break the pin. When, however, it was desired to slip the extension force, this could be instantly effected by a small lever hinged close by the pin. Its long arm stood at right angles to the rest of the instrument so long as the extension force was applied, and its short arm, of a wedge form, worked beneath the spring and elevated it, while it pushed against the hook and disengaged it when the long arm was depressed. Thus the extending force could at once be let slip from the limb without the risk of entanglement or of a moment's delay. Dr Watson had been fortunate enough to see Dr Keith employ the instrument in a case of dislocation of the hip-joint. From observation, he could testify that, whether actually useful in effecting the reduction of a dislocation, by enabling the surgeon to let go the extension force suddenly, it certainly appeared to be extremely convenient as a means for *instantly* slacking away the tackle when the dislocation had been reduced.

*Dr Coldstream* having taken the chair, *Mr Benjamin Bell* read a paper upon a

### XIV. CASE OF PERFORATION OF THE STOMACH, OCCURRING UNDER UNUSUAL CIRCUMSTANCES.

(*This paper will be found at p.* 783 *of the present number of the Journal.*)

*Dr John Gairdner* said, that in consequence of the allusion made by the author of this very interesting communication to his essay on certain forms of infantile disease as connected with the appearance, *post mortem*, of solution of the coats of the stomach, he felt called on to say something, though it would not be a great deal, on this important case. It was obvious that there was extensive softening and solution of the coats of the stomach, and that these appearances, which called for some explanation, might *possibly* be the effect of Hunterian solution by the agency of the gastric juice, which was his (Dr G.'s) view of the solution found in the infantile cases he had described. And yet he thought there were very marked differences between his cases and that of Mr Bell. In the former, the solution of the inner coats was very much more extensive than that of the peritoneal, as might be expected from its presumed cause, the action of a solvent from within the cavity of the stomach after death. In Mr B.'s case no such thing was observable. There was also no blackness of the coats of the stomach, as in Mr B.'s case, with the exception of slight spots at the eroded part of the gastric coats, obviously the effect of blackening by the action of the gastric fluids, of the blood which oozed from the open vessels at this part. There was also a marked difference in the characters during life; for in his cases there was no such severe suffering, or such distension by air, as in the case just described to the Society.

For these reasons, he was inclined to adopt the author's own view, that the perforation occurred by a vital process long in progress, and completed only a very short time before death, by the escape of the contents of the stomach into the peritoneal cavity.

*Dr Andrew Wood* remarked, that Mr Bell's case was interesting in several points of view: in the circumstances of its history, in the nature of the symptoms, and the results of the *post-mortem* examination. It was evident from the account given, that the young man had laboured for some time previous to the fatal attack under an affection, probably a chronic inflammation, with softening of the mucous membrane of the stomach. He had not been in a fit condition to undergo the severe and prolonged exertion of the excursion, or "paper hunt," to Roslin. Dr Wood was disposed to object very strongly to the violent exercises which seemed to be so much in fashion in public schools, especially in England, and which, he thought, might be, if they were not in fact, sometimes carried to a dangerous, or at least hurtful excess. He had heard of boys at Rugby running so great a distance as fourteen miles without stopping,—he was afraid to say in how short a time. Such feats required, even in adults who had strength for them, a long and elaborate course of previous training, in order to bring them up to the mark; and if growing boys, accustomed to the confinement of school, undertook such violent exertion without due preparation, the consequences could hardly fail to be injurious to their physical constitution. He had met with the case of a boy who, after winning the prize at a "paper hunt," had been attacked with pleurisy and pneumonia, referable, he thought, to over-exertion. He did not wish to attach blame to any individuals—certainly not to the masters; since these races were entirely voluntary on the part of the boys, and, within proper limits, were really deserving of approval. But he objected to the extent to which they were carried; and he was convinced that means ought to be taken to prevent the dangerous excesses to which youths were apt to go in the enthusiastic pursuit of athletic sports and games. These remarks, whether well-founded or not, he could not help making, as incidental to the case under review. With regard to the cause of the exhaustion or collapse which had come on suddenly during the walk homewards from Roslin, Dr Wood was of opinion, that at that time rupture of the *internal* coat only of the stomach had taken place,—the cause having *apparently* been over-exertion on the part of a boy unfit for it by deficient physical strength, and weak state especially of the stomach; aggravated, undoubtedly, by distension of the stomach in consequence of the liberal indulgence in such indigestible matter as raw turnips, followed by frequent and free draughts of cold water, succeeded, too, by a hearty meal at Roslin, with draughts of beer before and after it. Evidently complete perforation could not have occurred then, as the symptoms would have been such as to have prevented the boy from walking so far on his way home. But when the symptoms became greatly aggravated, shortly before Mr Bell was sent for—especially when the enormous distension of the abdomen had occurred—Dr Wood thought that the rupture had then become complete, by extending through all the coats of the stomach. Supposing that the real condition of the stomach had been known, could anything effectual have been done in the way of treatment, on the occurrence of the partial rupture? So far as he knew, to put the patient thoroughly under the influence of opium was the only means that could afford any chance of recovery. Under such circumstances, the administration of stimulants could only prove hurtful. That cases of complete perforation have recovered, in consequence of adhesions contracted to the liver or some part of the intestinal canal, cannot be doubted. Opium, as tending to favour what unfortunately is but a rare result, seems the most rational treatment. To one case he (Dr W.) might be permitted to allude, which had occurred in his own practice, where the symptoms of perforation were exceedingly well marked, and where recovery took place contrary to his expectations. In this case, opium was steadily employed in a solid form,—all other ingesta into the stomach being interdicted. This and other recorded cases led him to believe that a favourable issue might in some cases arise even more frequently than was commonly supposed.

*Dr George W. Balfour* directed attention to the fact, that the practical interest of Mr Bell's case was much enhanced by the resemblance which in its history and symptoms it bore to a particular affection, which, though rare in man, is of by no means infrequent occurrence in other orders of the class Mammalia—in the horse and cow, for instance,—passing in them by the name of "acute indigestion," and characterized by great and increasing gastric disturbance, tympanitic distension, and even vomiting, culminating frequently in rupture of the stomach, peritonitis, and death. And he (Dr. B.) instanced a case (in a horse) which had come under his own observation, in which the rupture had taken place through an ulcer in the neighbourhood of the ilio-cœcal valve, and in which the ulcer presented a phagadenic appearance, somewhat similar to that in the stomach in Mr Bell's case. Dr Balfour was also inclined to suppose that the debility which came on, in Mr Bell's case, soon after leaving Roslin, was very probably a species of reflex paralysis, taking its point of departure from a weak and overloaded stomach, and closely analogous to what passed among veterinarians under the name of stomach staggers (the vertige abdominal and indigestion vertigineuse of French veterinarians—very closely allied to what *we* term syncope senilis arising from gastric irritation). As an illustration of the best mode of treatment of such cases when early recognised, Dr B. instanced the case of a boy of eight years old, who, having eat a quantity of raw turnips, was seized with acute indigestion, followed by tympanitic distension and a fit. No doctor being at hand, his friends sent for the clergyman, thinking the boy dying; and the clergyman, by promptly administering an emetic, had the satisfaction of speedily restoring him to health.

*Mr Edwards*, as an old pupil of Rugby, for which he still retained a special affection, objected to any prejudice being formed against the public schools on account of the sports of the boys. The paper hunt, or "hares and hounds," had been a favourite game for many generations, and he had never heard of any accidents happening in consequence of it. In fact, the boys are always under proper medical care, and the doctor who visits them prevents the weak boys from taking violent exercise. A youth with an inflamed stomach might be subject to sudden and fatal illness even without violent or over-sustained exertion; and such exceptional cases did not apply to healthy boys following the sports which the traditions of the school had proved to be safe and salutary. Mr Edwards directed attention to the specimen of disease of the stomach which he had laid before the Society.

*Dr Wright* could confirm, from his own experience at a large public school, the freedom from danger of such games as the "hares and hounds."

*Dr Haldane* observed that Mr Bell's case was one of great importance and interest, but that there were certain points of it which required to be cleared up. It appeared to him that no perforation of any considerable size could have existed during life, and he was inclined to doubt whether any had taken place at all; the greater part of the opening seen in the specimen was evidently due to *post-mortem* changes. The vomiting which occurred during life was a sufficient proof that no large rupture could have been present at that time. The case had presented the curious symptoms of emphysema in the right groin, on which no light had been thrown by the account of the *post-mortem* examination. Dr Haldane had met with many cases of tympanites of the peritoneum, but had never observed it to be associated with emphysema of the groin, and he was at a loss to account for its occurrence. If there had been perforating ulcer of the cœcum, the emphysema could have been readily explained; but Dr Haldane did not see how it could be accounted for by the existence of a rupture of the stomach.

*Dr John Struthers* wished to direct the attention of the pathologists present to an anatomical point. When perforation of the back of the stomach takes place, the contents must escape into the lesser sac of the peritoneum, and can get into the greater sac only by passing upwards, and to the right, through the narrow curved canal of Winslow. This would be facilitated by the patient lying on the right side, or by the compression of vomiting upon the already filled lesser sac. He (Dr S.) had once seen a case in which the whole of the greater sac of peritoneum was inflamed and covered with lymph, while the lesser sac was quite healthy. An operation, laying open the abdominal cavity, had been performed a few days before. He would like to know whether any difference was noticed between the state of the lesser and greater sacs in this case; and whether the pathologists present had noticed any such difference according as perforation had occurred at the front or back of the stomach.

*Dr Haldane* remarked, that perforating ulcers were most common on the posterior wall of the stomach; but as they usually form strong adhesions to the adjoining textures, ruptures seldom occurred there. When perforations take place, the ulcer is usually placed on its anterior wall, and the opening communicates with the main cavity of the peritoneum. He was not aware that attention had been particularly directed to the point referred to by Dr Struthers.

*Dr Warburton Begbie* observed that the cause of the emphysema was involved in much obscurity; but although it was at first noted only in the groin, the emphysema had also been present in the neck and chest. He was of opinion that it was produced by an independent but simultaneous lesion of the lung; for it would be remembered that Mr Bell had mentioned the existence of interlobular emphysema of the lungs.

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## PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

### SESSION XIX.—MEETING V.

*February* 22, 1860.—Dr KEILLER, *President*, in the Chair.

### I. EXOMPHALOS AND OTHER MALFORMATIONS.

*Dr T. A. G. Balfour* gave a description of two fœtuses which were the subjects of exomphalos and other malformations, and made some observations with regard to the mode in which such monstrosities were produced. (*See his communication*, *page* 611.)

*Dr Keiller* reminded the Society that he had communicated several cases of this kind of deformity from time to time. 1. In one case there was a simple transparency, as it were, of nearly all the walls of the abdomen, in a child that was at the same time affected with spina bifida. 2. In a second case the child lived, and sucked greedily for two days, with a mass of the bowel protruding through the enlarged umbilical opening. An attempt was made to reduce it, but the crying of the child rendered the attempt futile. The child died apparently from strangulation of the portion of extruded bowel; but no *post-mortem* examination had been obtained. 3. In a third case the child lived several days, till the cord separated. The membrane then became opaque, and sloughing of the hernial mass supervened. 4. In another case, where the mother was a primipara and phthisical, the child died at once. 5. Dr Keiller had in his museum, also, a pig, which presented the double malformation of exomphalos and spina bifida. 6. Dr Keiller also showed a preparation of a fœtus, about the fourth or fifth month, which had not only exomphalos, but at the same time clubbed feet, with long toes almost resembling fingers. The fœtus was, moreover, anencephalous, and had complete spina bifida.

*Dr Alex. R. Simpson* stated that he had met with a case of exomphalos resembling one of those referred to by Dr Keiller, where the greater portion of the small intestines protruded through a large opening in the centre of the abdominal parietes, and were covered by an expansion of the sheath of the cord, through which the coils could be distinctly seen. Pressure on the hernia was so painful to the child, that its complete reduction was rendered impossible. On the second day after the child's birth the membranes became dimmed, in consequence of an inflammatory deposit on its inner surface; and on the third, the whole had begun to assume a dark bluish aspect, when the infant died. No autopsy had been allowed.

### II. PUERPERAL PHLEBITIS.

*Dr Pattison* read somes notes of an interesting case of puerperal phlebitis.

*Dr Keiller* mentioned a case which he had attended along with Dr Sidey, where a patient was cured of varix of the lower limbs of long standing, as the result of an attack of puerperal phlebitis.

### III. SPINA BIFIDA.

*Dr Alex. R. Simpson* showed a preparation of a fully developed fœtus, which had been sent to Professor Simpson by Dr Thomson of Hawick, and which was affected with spina bifida of some of the upper dorsal vertebræ, while the cervical vertebræ were all so contracted that the head seemed to be set directly on the trunk. "The only peculiarity in the delivery," as stated by Dr Thomson, "was an immense superabundance of liquor amnii; the most utter torpor of the uterus after rupture of the membranes; tendency to hæmorrhage from this cause, and partial separation of the placenta; and delivery by the feet."

*Dr Keiller* stated that he had seen a case of spina bifida in a girl six years of age, whom he had attempted to cure by drawing off the fluid several times by means of a grooved needle. The tapping never seemed to be followed by any bad effects; but the girl had been withdrawn from his observation before any satisfactory result had been obtained.

*Dr Pattison* stated that he had met with a case of this disease in a fœtus, where the cystic tumour of the spine presented at birth, and rendered the diagnosis of the presentation very puzzling, and, indeed, impossible.

*Dr J. A. G. Balfour* stated that he had met with several instances of this deformity, but none in which he had been able to get the child to live. He had attempted in one case to effect a cure by covering the cyst with collodion, so as to produce a certain degree of compression in it, before letting off the fluid; but the child died notwithstanding.

### IV. ACUTE MENINGITIS.

*Dr Alex. R. Simpson* communicated the following case of acute meningitis:—Mary B., an infant æt. eleven months, had been in the enjoyment of the most robust health (had passed through several stages of dentition irregularly, but successfully) up till Friday, February 3d, when she was put to bed in her ordinary state of health. About midnight, her wet nurse being wakened by her crying, found her feverish and restless; and, after vainly trying for some hours to quiet her, sent for a doctor about 6 A.M. Dr Symington saw the child, scarified the gums along a space where some teeth were ready to burst through, and prescribed some simple febrifuge. I first saw the infant on the Sunday forenoon, and by that time Dr Symington had again seen her, and recognised that she was suffering from hydrocephalus. The anterior fontanelle was swelled and very prominent, and throbbed violently; eyes normal, but pupils not very sensitive; skin hot and dry; no appetite; head inclined to be bent back on the body; pulse weak and rapid. Ordered a blister to the nape of the neck, cold to head, grey powder and chlorate of potash. Next morning Professor Simpson saw the child with me, and agreed as to the unfavourable prognosis. The child could not now be persuaded to suck at all; it was therefore ordered to give it some sack whey. It had had some slight convulsive attacks on Sunday morning. On Monday evening these recurred more severely; and on Tuesday morning I found the child very much sunk—the eyes quivering unsteadily, and sight and hearing both appeared to be in abeyance. The convulsions returned in the evening, more faint and feeble than before, and about six o'clock on Wednesday morning the child died, having been ill only four days and a few hours. On opening the skull a small coagulum was found in the longitudinal sinus; in all the other veins only fluid blood. The pia mater was opaque, and very vascular on its inner surface, and covered in patches with flakes of lymph, sometimes yellowish, more frequently clear. The pia mater was thickened and vascular, and had lying beneath it a quantity of firm, greenish-yellow lymph, which at some parts, and more particularly over the upper surface of the anterior lobe of the left hemisphere, which was shown to the Society, was of very considerable thickness, and passed down into the sulci between the convolutions. This lymph deposit was spread continuously over nearly the whole of the upper surface of the brain; and patches of it were also found on the base, especially at the fissure of Sylvius and the point of the middle lobes, over the optic commissure, in front of the pons Varolii and at the sides of it, around the roots of the fifth pair of nerves. There were no tubercles to be seen in any part of the brain; and the case altogether presented an example of that comparatively rare form of hydrocephalus, where the membranes of the brain become the seat of an acute inflammatory process without the concurrence of any form of specific disease.

## SCOTTISH UNIVERSITIES COMMISSION.

### DEGREES IN MEDICINE.

The formal decision of the Queen and Council, as given in the *Gazette*, confirms *simpliciter* the ordinances of the Universities Commissioners of 6th August 1859 and 19th March 1860, and directs that they shall come into operation and receive effect from the 4th February 1861.

## KING'S AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND, AND THE DEGREE OF M.D.

We mentioned in the last number of this *Journal*, that the Dublin College of Physicians, acting under eminent legal advice, had decided to confer upon their licentiates the degree of M.D.; and that the Irish Branch Council had agreed to admit the additional title upon the Irish Register. The Executive Council, before entering these titles on the General Register, applied to Sir Hugh Cairns and Mr A. Hobhouse, from whom they have received the following opinion:—

"The Executive Committee of the General Medical Council.

"1. Supposing the College to have no larger powers than are disclosed in the case laid before the Attorney-General of Ireland, we are clearly of opinion that it has no power to confer the degree of Doctor of Medicine. And without the degree there can be no right to the title, to whatever extent it may have been conceded by courtesy.

"2. We are of opinion that the title in question is not one of the qualifications mentioned in Schedule (A) of the Medical Act, which only mentions Fellows and Licentiates of the Irish College of Physicians.

"3 and 4. We think that the Registrar of the General Council is not bound to copy into the General Register entries in the Local Register which on their face are erroneous, nor to enter as qualifications particulars which are not within the terms of the Act, and are contrary to the orders and regulations of the Council. The remedy should, in our opinion, be found in a correction of the Local Register. We think it the duty of the Local Registrar to keep his Register in conformity with the lawful directions of the General Council, or of the Executive Committee, to whom they have delegated their powers; and if he fails in this duty, probably a mandamus could be obtained to compel him to perform it. It is, however, most likely that, as the General Council have the power of publishing the Medical Register in the proper form, it will be found that this is practically the only matter of importance, and the Irish Branch Council will think it useless to continue the controversy.

(Signed) "H. M. Cairns.
(Signed) "Arthur Hobhouse.

"*Lincoln's Inn*, *Jan.* 31, 1861."

In conformity with this opinion, Dr Hawkins, the Registrar, has been authorized by the Executive Committee to write to the Registrar of the Irish Branch Council, informing him, that he cannot enter in the General Register the title of "M.D.," which has been attributed in the Irish Register to some of the licentiates of the King and Queen's College of Physicians in Ireland, and requesting him to have such entries struck out from the Local Register.

## ROYAL COLLEGE OF SURGEONS' CONVERSAZIONE.

The first of a series of conversaziones to be given by the Royal College of Surgeons during the present session, was held in the Surgeons' Hall, on Friday, 25th January. There was a very numerous and brilliant assemblage, and each gentleman, on entering, was received by Dr DOUGLAS MACLAGAN, President of the Society. Among the gentlemen present were—

The Hon. Lieutenant Fitzmaurice, H.M.S. "Edinburgh;" Sir John Forrest, Bart.; Professors Pillans, Allman, Balfour, and Macdonald (St Andrews); Dr Deas, C.B., R.N.; Dr Druis, staff-surgeon, R.N.; Dr M'Bain, R.N., surgeon; Major Anderson; Dr Skipton, 78th; Dr A. Fleming, H.M.I.S.; W. Bourke, R.A.; Bailies Johnston and Blackadder; Convener Cox; Councillors Mair, Dick, Wilson, Miller; W. Stewart of Carphin; Rev. Drs A. Thomson, Macfarlane (Greenock), and Marshall; the Messrs Orde, Sandford, Faithfull, Masson, Sandford, Milroy, Pulsford, and Gascoigne; Drs Renton, Coldstream, Haldane, C. Bell, Smith, Lowe, Pattison, J. Matthews Duncan, Wright, Peddie, Sanders, Skae, Omond, J. Hunter, Messer, Nasmyth, Andrew Wood, J. Struthers, J. Gairdner, John Smith, J. Simson, Inglis, Dumbreck, and B. Bell; Drs Macadam, M. Thomson, Clelland, Turner, etc.; Mr A. Bryson, P.R.S.S.A.; Mr Brand, Union Bank; Mr M'Culloch, etc., etc.

The President stated that on this occasion he had the pleasure of welcoming representatives from the brother society, the Royal College of Physicians, the Lord Provost, Magistrates, and Council, the Army and Navy and East India Company, the office-bearers of the learned societies of Edinburgh, and the clergy of all denominations in the city. He then introduced Dr Sanders, lecturer on physiology and conservator of the museum of the College, who delivered a lecture on "Reproduction in the Animal Kingdom." At the close of the lecture, Professor Pillans moved a vote of thanks to Dr Sanders, which was seconded by Dr Andrew Thomson. The company then adjourned to the reception-room, and partook of tea and coffee.

## PRESENTATION AND DINNER TO DR ALEXANDER WOOD.

At a quarterly meeting of the Royal College of Physicians of Edinburgh, held on Tuesday, the 5th of February, the College presented to their President a full-length portrait of himself, painted by Sir John Watson Gordon, President of the Royal Scottish Academy, in testimony of their appreciation of his services in connection with the operation of the Medical Act.

On the evening of the same day, a number of the Fellows of the Colleges of Physicians and Surgeons entertained Dr Wood at dinner, in George Street Hall. Professor Simpson occupied the chair; Dr Seller acted as croupier.

## TESTIMONIAL TO PROFESSOR DAY.

We are gratified to learn that a movement is on foot for the purpose of presenting to Dr Day, of St Andrews, a testimonial from the graduates of that University, in acknowledgment of his labours in their behalf. There cannot be a doubt that the improvements in the examinational system introduced by Dr Day, have contributed largely to the interests both of the University and of its Medical graduates.

## QUARTERLY RETURN OF THE BIRTHS, DEATHS, AND MARRIAGES REGISTERED IN SCOTLAND, FOR THE QUARTER ENDING 31ST DECEMBER 1860.

### BIRTHS.

25323 births were registered in Scotland during the quarter ending 31st December 1860, being 390 more births than during the previous quarter. Allowing for increase of population, this would indicate an annual proportion of 320 births in every ten thousand persons,—a proportion below the mean of the corresponding quarter of the five previous years, which gives at the rate of 329 births in every ten thousand persons.

The proportion of births in the town and country districts varied considerably. Thus, in the 125 town districts, which include all the larger towns, and nearly an exact half of the population as at 1851, the number of births was 14062; while in the 870 rural districts, numbering an equal population in 1851, the births only amounted to 11261. The births in the town districts, therefore, occurred in the proportion of 341 births in every ten thousand persons of the estimated population, or one birth to every 29 persons; while in the country districts the proportion was 298 births in every ten thousand, or one birth to every 33 persons.

Of the 25323 births, 23028 were legitimate, and 2295 illegitimate, which gives the proportion of 9 per cent. of the births as illegitimate, or one illegitimate in every 11 births. The proportion of illegitimate births in the divisions and counties of Scotland, exhibits a general accordance with the returns of previous quarters, and shows that the proportion of illegitimate births still greatly preponderates in those counties which constitute the north-eastern and southern divisions of Scotland, and for which no plausible explanation has yet been given. Thus, while in the northern division of Scotland only 5 per cent. of the births were illegitimate, 5·5 per cent. in the north-western division, 6·4 per cent. in the west-midland division, and 7·5 per cent. in the great manufacturing and mining counties included in the south-western division, 12·5 per cent. of the births were illegitimate in the southern division, and no less than 16·6 per cent. in the north-eastern division.

It would also seem to be now an established fact, that in Scotland the proportion of illegitimate births is higher in the country than in the town districts; for whereas in the town districts 8·6 per cent. of the births were illegitimate, the proportion was 9·5 per cent. of the births in the country districts.

Of the 25323 births during the quarter, 12976 were males, and 12347 females, being about 105 male to every 100 female births,—a rather lower proportion of males than usual.

Of the births, 8794 were registered during October, 8191 during November, and 8338 during December; or 283 births daily during October, 273 daily during November, and 269 daily during December.

### DEATHS.

15862 deaths were registered in Scotland during the fourth quarter of 1860, being 2016 more deaths than were registered during the previous quarter, but only 233 more than occurred during the corresponding quarter of 1859. The deaths were therefore in the annual proportion of 201 deaths in every ten thousand of the estimated population, or one death in every 49 persons,—a proportion higher than the mean of the corresponding quarter of the five previous years, which only gives the rate of 198 deaths in every ten thousand persons; but lower than the English rate for the same quarter, which gives the proportion of 218 deaths in every ten thousand persons of the population.

The deaths in the town districts very much exceeded those in the country districts. Thus, in the 125 town districts the deaths numbered 10056, while in the 870 rural districts they only amounted to 5806, and thus showed an excess of 4250 deaths in the town districts. In other words, the deaths in the town districts were in the proportion of 245 deaths in every ten thousand, or one death to every 40 persons living; whereas in the rural districts only 153 deaths occurred in every ten thousand, or one death to every 65 persons living. This fact of itself shows that noxious agencies are at work in towns which cut off the population nearly one-third faster than in the country.

Of the 15862 deaths, 4845 were registered during October, 5082 during November, and 5935 during December,—thus indicating that in Scotland 159 persons died daily during October, 169 daily during November, and 179 daily during December.

### INCREASE OF THE POPULATION.

As the births numbered 25323, and the deaths 15862, the natural increase of the population amounted to 9461 persons. From that number, however, have to be deducted the emigrants during the quarter. From a return furnished to the Registrar-General by the Emigration Commissioners, it appears that, during the quarter ending 31st December 1860, 24030 emigrants left the ports of Great Britain and Ireland, and of these 1832 were of Scottish origin. If to this number 781 be added, as the proportion of those whose origin was not ascertained, the number of Scottish emigrants would amount to 2613, which, deducted from the excess of births over deaths, would show that the actual increase of the population during the quarter, irrespective of the immigrants, whose numbers cannot be ascertained, amounted to 7048 persons.

### MARRIAGES.

6553 marriages were registered in Scotland during the fourth quarter of 1860, being 2065 more marriages than during the previous quarter, but only 37 more than during the corresponding quarter of the previous year. This indicates an annual proportion of 83 marriages in every ten thousand persons,—by far the highest proportion during any previous quarter of the year, yet greatly below the English proportion, which is at the average rate of 100 marriages for every ten thousand persons during the December quarter.

Of the 6553 marriages, 3765 were contracted in the town districts, and 2788 in the country districts, being at the rate of 92 marriages in every ten thousand persons living in the towns, but only 73 marriages for every ten thousand in the country.

1394 marriages were registered during October, 2079 during November, and 3030 during December. Even these figures, however, do not exhibit a correct view of the very much larger proportion of marriages which occur during December, as perhaps the most favourite day for marriage in Scotland is the last day of the year, and the greatest number of such marriages are not entered on the registers till January.

### HEALTH OF THE POPULATION.

The health of the population has not been so satisfactory as could have been wished, chiefly from the prevalence of epidemics of small-pox and scarlatina. Both of these epidemics seem to have prevailed to a greater extent than has been witnessed for years; and in several localities diphtheria and the purely anginose variety of scarlatina, seem to have taken the place of the ordinary forms of epidemic scarlet fever. With the exception, perhaps, of the northern division of Scotland, these epidemics have been pretty generally scattered over the country, though in some localities it has been scarlatina, in others small-pox, which has been the prominent and fatal malady. The other epidemic diseases, as measles, hooping-cough, and typhus, do not appear to have been more prevalent than usual.

### WEATHER.

In this country the state of the weather has more to do with the number of deaths than even the epidemics themselves; for it appears to regulate the mildness or fatality of all diseases, and thus proves itself to be the real agent which affects the mortality. The weather during the quarter has been quite peculiar; for not only has the mean temperature been more than two degrees below the average of former years, but the fall of rain has been much greater than usual, being more than two inches above the average of the quarter, and the atmosphere has consequently been in an unusual state of humidity; the sun has given less heat during the day, and the cold has been greater during the night, and easterly winds prevailed to an unusual extent. It was not, however, till within a week of the close of the year that the cold set in with an intensity which has not been witnessed in Scotland during the present century; and in many of the Meteorological stations in Scotland, depending on their exposure and site, the thermometer fell from one to twelve degrees below zero of Fahrenheit's scale. This intense cold, however, occurred too near the close of the year to have any marked effect on the mortality; for even had it produced an immediate great accession to the deaths, many of these would not be entered on the registers before the books for December were closed.

The mean barometric pressure, corrected and reduced to the sea-level, was 29·784 inches in October, 29·919 inches in November, and 29·709 inches in December. The mean temperature of the quarter was 39°·7, being 2°·1 below the average of former years. Thus the mean temperature of October was 46°·0, of November 39°·1, and of December 34°·1. The mean degree of humidity was 87 in October, 90 in November, and 90 in December. The mean depth of rain during the quarter was 11·88 inches, or 2·13 inches above the average. Thus the mean depth of rain was 5·14 inches during October, 2·83 inches during November, and 3·91 inches during December. Winds with an easterly point blew 4 days during October, 17 days during November, and 14 days during December. Winds with a westerly point blew 19 days during October, 6 days during November, and 7 days during December.

## MEDICAL EXAMINATION PAPERS OF THE UNIVERSITY OF ST ANDREWS—December, 1860.

### First Examination.—First Part.

*To be translated into English.*

*De his, quibus caput infirmum est.*

Proximum est, ut de iis dicam, qui partes aliquas corporis imbecillas habent. Cui caput infirmum est, is, si bene concoxerit, leniter perfricare id mane manibus suis debet; numquam id, si fieri potest, veste velare; ad cutem tonderi; utileque lunam vitare, maximeque ante ipsum lunæ solisque concursum; sed nusquam post cibum progredi. Si cui capilli sunt eos quotidie pectere; multum ambulare, sed, si licet, neque sub tecto, neque in sole; utique autem vitare solis ardorem, maximeque post cibum et vinum; potius ungi, quam lavari: nunquam ad flammam ungi, interdum ad prunam. Si in balneum venit, sub veste primum paulum in tepidario insudare, ibi ungi, tum transire in calidarium; ubi sudarit, in solium non descendere, sed multa calida aqua per caput se totum perfundere, tum tepida, deinde frigida; diutiusque ea caput, quam cæteras partes perfundere; deinde id aliquamdiu perfricare; novissime detergere et ungere.

Give the origin or primary meaning of the following words:—Artery, Azote, Diastole, Lethargy, Masseter, Paralysis, Sinapism, Strangury, Trochanter, Zygoma.

### Second Part.—Chemistry.

1. What do you understand by specific gravity? Describe the methods of ascertaining the specific gravities of solids, liquids, and gases.

2. Give the process for the preparation of phosphorus; describe it; and enumerate the parts of the human body in which it is found in combination.

3. Write, in formulæ, the composition of the following substances:—Red Precipitate, Borax, Prussiate of Potass, Cream of Tartar, Oxalic Acid; and state how the last two are obtained.

### Second Examination.—Anatomy and Physiology.

1. Describe the ligaments connecting the first two cervical vertebræ with each other and with the occipital bone; and the muscles passing from each of these bones to the other two.

2. Describe the cœliac axis and its branches.

3. Describe the position and boundaries of the lateral ventricles of the brain. What is known, either from experiments on living animals, or from clinical observations, regarding the functions of the different parts of the brain?

4. Is the circulation of the blood in the capillaries influenced by any other agency than the contractile power of the heart and arterial system? What is known regarding the rate of movement of the blood in the arteries, capillaries, and veins, and regarding the force with which the blood is propelled from the left ventricle?

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### THIRD EXAMINATION.—FIRST PART.—MATERIA MEDICA.

1. What are the principal arguments in favour of, and in opposition to, general blood-letting, in acute inflammatory affections?

2. In what morbid conditions should wine and spirits be administered medicinally? What are the best indications for their administration in cases of fever?

3. State what you know regarding the therapeutic uses of electricity in its various forms.

4. How is oil of turpentine obtained? What is its action on the animal economy (1) in small doses, (2) in comparatively large doses, and (3) when applied externally? What are its chief uses in medicine? Write a Latin prescription, without using symbols or abbreviations, for a draught suitable for a case in which you would use it.

### SECOND PART.

*N.B.*—In answering the practical questions, the examiners require every candidate to specify the mode of treatment which he is in the habit of adopting, and the doses of medicine he prescribes.

### PRACTICE OF MEDICINE.

1. State the principal facts, so far as you know them, which show that impure drinking-water may cause disease. What diseases have been stated to be so produced, and what are the means to be adopted when epidemic disease is due to such a cause?

2. What are the remaining characters of a urinary sediment which is thrown down in a highly acid urine, in the form of colourless crystals soluble in the mineral acids? What forms of disease are frequently associated with this deposit? and what are the remedies to be employed?

3. Describe simple acute laryngitis, mention the diseases with which it is apt to be confounded, and give a short statement of the treatment.

4. Give the physical signs of pericardial fluid effusion, so as to distinguish this affection from others producing dull percussion of the præcordial region.

5. A man accustomed to active exercise, and pretty free living, is induced to apply for medical advice, by finding that he is unable to walk rapidly or far without painful breathlessness, and a sensation of sinking, to which vomiting is often superadded. He has also a little cough, and has once or twice expectorated blood. On auscultation, a murmur is discovered with the second sound of the heart at midsternum, and over the base. The pulse is soft, but full and bounding; the murmur is audible in the carotids; the heart's impulse is increased. What is the disease? Remark upon its probable causes and on the prognosis.

6. A child of two years old becomes fretful, shivers, and is feverish, pulse being 120 to 130. For twenty-four hours there is painful sickness, and the epigastrium is tender. During the next twenty-four hours there are one or two violent convulsions. On the third day all the symptoms are greatly relieved, and there is a crop of disseminated red acuminated papules on the skin. What is the disease, and what will be its probable course from this period?

### Fourth Examination.—First Part.—Surgery.

1. Describe the various methods of arresting hæmorrhage, arterial and venous.
2. Describe the principal kinds of ulcer, and the treatment of each.
3. Describe the symptoms and treatment of rupture of the bladder and urethra.
4. A patient has a deep abscess pointing at the groin. What probably would be the other symptoms, and the prognosis and treatment?

### Second Part.—Midwifery.

1. Describe the phenomena of the second stage of labour in an occipito-posterior position.
2. What signs of pregnancy are available in the end of the third month of utero-gestation?
3. On the *post-mortem* examination of a woman dying during menstruation, what is observed?
4. After a fortnight of undefined illness, A. B., aged six years, complains of headache, is often sick and vomits, has constipated bowels, is somnolent, but the sleep is disturbed. What is probably the disease, and what its probable progress?
5. During a labour difficult in the second stage, sudden abdominal fixed pain comes on, there is great collapse, the labour-pains cease, vomiting of dark-coloured fluid matter begins, and, on a vaginal examination, the presenting head is found to have somewhat retired, while a little hæmorrhage at the same time flows. What is the nature of the case, and its probable progress?

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## TRIAL OF JOHN M'FADYEN FOR MURDER AT THE GLASGOW WINTER CIRCUIT, December 1860.

### DEFENCE OF INSANITY.

The following case, where insanity was pleaded in defence to a charge of theft and murder, presents some curious features. It shows in a striking light the imperfections of our criminal law, the strict principles of which lead to the pronouncing of sentence of death upon those who are almost incapable of comprehending its meaning, and in circumstances where it is utterly impossible, consistently with the interests of humanity, to carry it into effect.

The indictment charged the prisoner (1) with *theft*, committed on 25th August 1860, by decoying from Commercial Road, Hutchesontown, Glasgow, Alexander Shields, a child aged two years and three months, to a spot on the south bank of the river Clyde, near Clydevale Works, and there stripping from the person of the child its body-clothes; and (2) with *murder*, committed by having thereafter, at the same place, thrown the child into the river Clyde, and held him under water with a piece of wood or stick till he was drowned.

The defence stated for the prisoner was generally "not guilty;" and specially that at the time of committing the acts libelled he was of weak mind and insane.

The presiding Judge was Lord Cowan. Mr A. Burns Shand, advocate-depute, assisted by Mr Stair A. Agnew, advocate, conducted the prosecution; and the prisoner was defended by Messrs J. Dove Wilson and Robert Maclean, advocates; Mr George Yuille Strang acting as agent.

The appearance of the prisoner was most singular. He seemed stunted and dwarfish in person. His size and development were those of a boy of twelve or thirteen years. It afterwards appeared that he was nearly twenty-one years of age. He was of broad build and rather stout appearance, though the muscles were undeveloped and flaccid. His head was of largish dimensions, round shape, and presented nothing remarkable in its appearance. The lower part of his face was full and heavy, the whole expression stolid. His eyes were of ordinary size, the pupil dark and bright, and very slightly mobile.

Counsel for both parties consenting, the Court permitted the medical witnesses to be present during the trial, to hear the evidence as to the circumstances of the crime, and the previous history of the prisoner.

The evidence showed that the prisoner was a native of Belfast; but, when an infant, had been brought by his parents over to Glasgow, where they and he lived till 1859, when they went again to Belfast. They had returned thence to Glasgow in July 1860, and had been six weeks in Glasgow, when the prisoner was apprehended on the above charge. His father was a shoemaker, and had tried in vain to teach him his trade. The parents, farther, along with some of the other witnesses, spoke to his having always been considered weak-minded and foolish. In his habits he was dirty and destructive. He associated with children younger than himself, who followed him, sometimes annoying him, and calling him the daft laddie. At school he learned nothing. His memory was very defective. More than once his parents required to apply to the authorities in Belfast to have him put under restraint, as he was so violent. Eventually they had to leave Belfast in consequence of his outrageous conduct. He often threatened to take his mother's life. Shortly before the act in August 1860, a neighbour who found him on her stair, having been shut out of his own house, took him in for the night. She gave up to him her only bed, and lay herself on the floor, but dared not sleep, as the accused talked incoherently all night about his being a rifleman, a soldier, and having three ships, etc., and never slept. This woman thought he was not of right mind, and she explained that she was afraid he might do some injury to her children. About three weeks before the acts libelled, a witness saw him on the street, with a crowd of boys following and tormenting him. The accused was in a violent state of excitement, and was conducting himself in such an outrageous manner that the witness thought he was not fit to be at large. The prisoner had never been in an asylum.

He was sent in 1855 to the Reformatory School of the House of Refuge in Glasgow, where only sane persons are admitted. When actually sixteen, the governor thought him eleven years of age, and physically, mentally, and morally stunted and undeveloped for one of such age. He was in school for four and a half years, but could read very imperfectly when he left, although he had got three hours' instruction per day. He knew nothing of arithmetic. He had a considerable amount of cunning, and the sense of the ludicrous was the prominent feature in his character. Though very passionate, he did not seem to wish to do serious injury to others. The governor described him as weak in his notions of right and wrong, but as knowing the distinction, though very imperfectly, and as being quite alive to the fear of immediate corporal punishment, which could influence his conduct for some short time. He attributed the backwardness to very serious inability and mental incapacity. The boy's mind was a blank as to religious knowledge, but he could control his passion. The governor's opinion of him while in the reformatory was that he was very weak in intellect, but not insane. This evidence was borne out by the head teacher of the establishment.

A person who had been confined for nine weeks before the date of the trial in the same cell with the prisoner gave the following account of his conduct:—He was very mischievous; noisy; restless; sang or talked incessantly; never singing a whole song, but passing from subject to subject. He was very irritable; annoying and preventing his fellow-prisoner from reading. He was a great mimic, and laughed often for no apparent reason. He had no understanding of his position. When told to pray he said he saw no use of it, as if he were hung it would not bring him back to life. He laughed at being hung, saying it will be all one to the grave-digger. The fellow-prisoner thought him of unsound mind.

It was proved that M'Fadyen had been previously twice convicted of theft. This was before being sent to the Reformatory. One of the convictions was for child-stripping.

Such being an outline of the evidence led on both sides of the bar as to the character and capacity of the prisoner, we shall now give an account of the commission of the acts libelled against him, and his conduct immediately subsequent to their commission. These form the most peculiar features in this case.

The prisoner was proved to have met the child in Commercial Road, between two and three o'clock on Saturday afternoon, 25th August 1860, and to have lifted it and carried or led it along South Wellington Place in the direction of the Suspension Bridge over the Clyde. Nothing further was seen of them till the prisoner was observed at the river side above the Suspension Bridge. There was a public footpath up the side of the river, out of which, near the place of the crime, Govan Street opened. The river was eighty yards wide here, and, on the opposite side of the river, there was a footpath and carriage drive in Glasgow Green. The place was in view of the public Gymnasium in the Green. The bank above the spot was precipitous (having been in part built up), and from the river edge to the footpath on the top of the bank the distance was twenty-four feet. The place could not be seen by one on the footpath above it, but it was visible from the opposite side of the river. What the prisoner did at this spot was described by an eye-witness to the whole transaction. The account will be most shortly given in his own words:—I was sitting on north side of river in Green. No one near me but old woman and two children. People at Gymnasium. Saw boy like sitting down with back towards me on opposite side of river, close to embankment. Attention diverted to something else for four or five minutes. When I looked again the boy was in act of flinging something into water. Could not see what it was. The boy steadied himself from recoil; turned rapidly round; took up a stick or piece of wood; put it in water, and seemingly pushed the object he had thrown in away from him. I saw a spluttering in the water, and thought it was a dog. Boy then walked back three or four steps, but suddenly turned and went half-way up the embankment. He then came back to the side and looked into the river, and again walked away up bank, carrying stick in a jaunty easy way. He went in direction of Govan Street, and could have gone away by it without being observed. At this time two girls were coming down the walk along the river on same side, and, although he need not have done so, and would not otherwise have been observed by them, he turned round of his own accord, went up to them, and accosted them.

The girls' story was, that he told them to come and see a little child drowning. They did not believe him, and told him to be off,—one of them saying to the other that he wasn't right in his mind, and not to mind him. He said to them, "As true's death a whore had put it into the water;" and afterwards, "They must have had a cruel heart that would do such a thing to a wee one." They went down to the river edge. Prisoner showed them the child's clothes lying on bank. He said he saw the whore doing it, and that he would see if he could feel it with the stick, which he put into the water accordingly. He asked if he would go to the dead-house to give information, and get a boat and try and save it yet. The Dead or Humane Society's house is on the opposite bank of the river, below the Suspension Bridge. One of the girls told him to go, but, as he was going in the wrong direction, she recalled him, when he turned quite readily, and she told him to take the clothes (which he did), and showed him right road. This was the first time he had lifted the clothes after throwing the child into the water.

He then ran along the bank of the river towards Suspension Bridge. He met the mother of the child. He still had the stick in his hand. She asked him if he saw a wee thing, and he said, Yes—there's his clothes, and that a whore had flung him into Clyde, and she was to be catched. He gave her the clothes and continued to run in direction of Suspension Bridge. She screamed and tore her hair. Whereupon the person who had seen the whole transaction, from the throwing of the thing into the river, ran down the north side of the Clyde, pointing to the boy and shouting to catch him. He was caught at the Suspension Bridge. All the witnesses identified the prisoner. The person who caught him said, "What are you running for?" He said, Somebody had put a child in the water, and they are blaming me for it. The two girls then came up and said he had done it; when he said, "As sure's death it's not me." The person from the opposite side of the river then came up and caught him by the arm, and asked him what he had done. He said, "I ken naething aboot it," and drew himself up "in a queer way," and asked to be let away. The same person again said, "I saw you, sir;" when prisoner answered, "God strike me dead, it was not me that did it."

The whole of the parties went up with the keeper of the Humane Society's house to the place. The party who had seen the transaction pointed out what he thought to be the place. The boy corrected him, and said, "No; there," pointing to a different place. One of the party said, "Oh, then, you did it." He said, "Yes." Two men came up at this time, and proposed to throw the prisoner into the water. The person who had seen the transaction said, "Surely he must be mad," and asked him if he had ever been in an asylum. The boy put up his hand to his eye, and said he had been, in Belfast and here. He said he neither knew child nor its parents. The girls asked him why he had done it. He said, "For nothing," two or three times. One of the witnesses says his manner was cool and collected, and that he answered as any sane person might have done speaking about an ordinary piece of business, and that he did not appear excited; another, that he seemed to understand all the questions put, and nothing struck him as peculiar about him; while a third says he had a frightsome look about him: his eyes were staring and very wild-looking; he was scared-looking; all shaking; but answered every question quite correctly. This witness thought him "*insane*" on looking at him, because he stared so, and shook and answered so deliberately.

This concludes the evidence of the non-professional witnesses adduced on both sides. We shall now give the medical evidence (all of which was led by the Crown) *in extenso*. The first medical gentleman examined was

*William Young*, M.D., Surgeon to a Police District in Glasgow; who deponed—I was informed prisoner was in custody on 25th August 1860. I saw him about 4 or 5 o'clock of the afternoon. I had some conversation with him. He said he had found a child in Commercial Road, and that it was crying for its mother—that he took it along bank of Clyde for the purpose of washing it. I charged him with the intention to steal its clothes. He said "No," but it was to wash it. He persisted in that statement. He told me he took it to side of river and threw it in. I asked him why he did not go in and wash it, and said the river was not deep. He seemed puzzled, but persisted in his story. I had a second interview on the following day, Sunday. He then admitted that he drowned child for the sake of its clothes. He said he took it to side of river, a retired spot, to take off clothes. I asked him how he did the deed, and he showed me. I made an entry, in a book which I keep for the purpose, about the first interview. The first entry in reference to the prisoner is, "Seems of weak mind." Next entry relates to second interview, and is, "Examined him again, and given another story." He answered the questions I put to him with ordinary correctness. He had not a full appreciation of amount of criminality of deed. He thought it was wrong, and I said, "You will be hanged for doing this." He said, "Yes," but it seemed to make no impression on his mind. From the evidence and facts of case as I have heard them disclosed, I am more fully convinced than ever that he was of unsound mind at the time he committed the act. Medical men differ in their views of insanity. The prisoner had gone beyond the boundary line of sanity. This is exhibited in the *act* of his crime, and the way in which it was done. I asked him how he did the deed, and he took a stick in his hand, placed his bonnet on a chair, and with stick pushed bonnet to the ground. That was not like the act of a sane man. These are some of my reasons for thinking the prisoner of unsound mind. His want of ability to learn is another reason for my opinion.

At this stage, the witness having taken unwell, his further examination was dispensed with.

*James Morton*, M.D., said—I was acting as physician of Glasgow Prison from 25th August to 21st ultimo. I was succeeded by the witness Dr Watson. I saw prisoner first on 28th August. Afterwards I saw him once a-week, and conversed with him. I had my longest conversation with him on the first occasion. My attention was directed to the state of his mind. I made the charge against him, and various things, subject matter of conversation. He seemed perfectly to understand the questions put to him. I thought him perfectly sound in mind. I think him so still, after having heard the evidence. I don't think he is a very intelligent lad. I have seen lads more stupid. I think he is not intelligent, and he is certainly weak in comparison with others. I think he can distinguish right from wrong, truth from falsehood. I consider that he would be quite aware of what he was doing in an action rendering him liable to punishment. I don't know if he could control his passions, though he had this power to some extent. I never saw him excited. I first examined him on the 28th, and, applying my mind to judge of his mental state at the time the act was committed, I do not think it was different from what I have described it to be when I saw him. In saying so, I take the evidence led to-day into consideration.

*Cross-examined*—I think prisoner to be of sound mind. I call one unsound whose thoughts and actions are inconsistent with each other. The actions of an insane person may sometimes be consistent with each other;—there are monomaniacs. There are various kinds of insanity. Imbecility is one species—an imbecile is one of unsound mind. Imbecility is a great deficiency of intellect, accompanied by hallucinations. Dr Taylor is an authority on questions such as this. (Passage from *Taylor's Medical Jurisprudence*, 6th edition, p. 871, read, in the following terms:—"Persons affected with idiocy and imbecility do not suffer from hallucinations and illusions, like those who labour under mania or monomania.") I consider that to mean that the hallucinations of imbeciles are different from those of violent maniacs. There must be hallucinations before a person can be called an imbecile. A person of weak intellect is not insane, unless he be the subject of hallucinations. When there is a total want of intellect the person is an idiot. Idiocy is sometimes unaccompanied by hallucinations. The mind is a total blank. I consider panel could reason correctly, notwithstanding his inability to learn. I made observations to see if panel had any moral sense. I consider he had a knowledge of the wrongness of the act under inquiry. He expressed remorse and sorrow. He gave a motive for his crime on one occasion. I only asked him for it once. If he gave different accounts of his motive, this would not affect my opinion of his sanity, but it would of his morality. Panel not only exhibited remorse, but had tears in his eyes, and seemed sorry. There are no symptoms of insanity in the mode in which the act was executed. It was well planned. In saying so I have regard to the publicity of the place where, and to the time when the act was committed, to the statements made by the panel immediately after the act, and subsequently in prison. It is sometimes necessary to see insanity in various circumstances. I never saw prisoner in a state of passion. I could not have judged so well of his mental capacity had I seen him in such circumstances. An insane person is often mad for a day or so, and then sane for weeks. Seasons of calmness follow those of great excitement. The prisoner's physical development is very defective for 21 years of age. The lower kinds of insanity are often the result of this. Imbeciles are often, though not always so, from defective organization. I tested the prisoner on his own history, and he gave a correct account of it. His conversation was not marked by want of continuity. He never exhibited such. I can't say he knew the difference of degrees of crime, but he seemed aware of the difference between the present and his previous crime of theft. He had a perfect knowledge of right and wrong. I did not test him on religious matters, nor did I speak to him of the punishment likely to follow on the present act.

*John Coats*, M.D., deponed—I had two interviews with the prisoner. On both occasions I was accompanied by Dr Thomas Watson. The prisoner understood our conversation perfectly, and gave intelligible replies to our questions. We had some conversation with him as to his past life. His memory is defective. His education is very defective. He knew his letters defectively, and was like a child at spelling; very deficient in arithmetic; has almost none; could not tell the amount of twice twenty. He talked of crime as what he now knew to be wrong. He knew the punishment for his crime,—that he was likely to be hanged. Could distinguish between right and wrong. Could repeat a form of prayer, but had very imperfect comprehension of its meaning. The conclusion we came to was, that he was of weak, undeveloped intellect. He possessed the ordinary faculties, and they were perfect so far as they went, but weak. He did not exhibit remorse or pain, and very little feeling. He is not insane, in the proper sense of the word. I have heard the evidence of the governor of the reformatory, and I concur in the result at which he arrived. The prisoner is not imbecile or fatuous. The mode in which he performed the acts, as heard by me in evidence, confirms my views.

*Cross-examined*—I examined the physical development of the prisoner. The statement of his age as twenty is probably correct, but he is very imperfectly developed for a person of twenty. Weakness of intellect and of body are frequently found together, and they are connected. The prisoner has no capacity for any further intellectual development. It is very common for the insane to show a large amount of cunning. Weakness rather than want expresses panel's state of mind. There is no power absent, but powers are weak. The reasoning powers are more defective than the perceptive faculties. The prisoner showed almost no indication of his being possessed of a moral sense. Wrong to him appears more in its character of punishable than abstractly. He spoke of different degrees of guilt in the same way; but when question put to him, knew that murder greater crime than theft. He had a very imperfect notion of punishment in the next world. This want of intellect does not amount to insanity. I would consider his intellect not higher than that of a child of from three to six years of age, or younger. There is no feigning about him; he is quite candid. A person may be an imbecile though he labours under no hallucinations.

*Re-examined*—There was a certain degree of intelligence in the circumstances of the act.

*By the Court*—Weakness of prisoner arises very much from his body. I think he was born weak. I think prisoner has sufficient mental power to govern his emotions and passions, and to restrain himself from doing what he knew to be wrong; though his passions might be uncontrollable in the same sense as those of any excitable person. He was capable of refraining from this act, so far as mental power was concerned. The accused knew the act of throwing the child into the water so as to drown it to be a wrong or punishable act. It did not seem to arise from sudden impulse, but is marked by deliberation.

*Thomas Watson*, M.D., deponed—I accompanied Dr Coats to see the prisoner. I have heard the evidence which has been led to-day. I thought him an individual who might be technically called imbecile, *i.e.*, one of defective but not perverted faculties,—a person of weak mind. He possesses the ordinary perceptive faculties. He understood that his acts were punishable, and in that sense wrong. His idea of wrong is nearly commensurate with his idea of the punishableness of the act in this world. The prisoner's mind is not perverted, as he has no illusions. He is deficient in intellect.

*Cross-examined*—His conversation was marked by a great want of continuity and accuracy. He has not the knowledge of right and wrong which perfectly sane people have. Insane people have some idea of right and wrong. I could not make out that he knew the difference of degree in wrongness of theft and murder. Prisoner is deficient in the ordinary reasoning faculties. He is defective in degree. It is common for insane people to show low cunning, and even marks of design. These are not proofs against insanity.

*By the Court*—Prisoner was cognisant that theft and murder were wrong and punishable. In the prisoner's case, I think that the dread of punishment, as a restraining power, might be removed by a slight motive; and that when it was so removed, his restraining power went with it. I think he knew the acts for which he is now charged to be wrong; but his will was so weak, that he could not resist doing them when there was the counterbalancing motive of acquiring a few pence, accompanied by the chance of escaping detection. The punishment would require to be imminent to operate as a restraint on prisoner's mind. His self-governing powers exist, but a slight temptation was in his case equivalent to a much greater one operating on a stronger mind.

*Mr Shand* addressed the jury on the part of the Crown, and craved a verdict of guilty as libelled.

*Mr Dove Wilson* followed on behalf of the prisoner, and contended that it was made out that he was insane at the time of the commission of the acts charged.

*Lord Cowan* then summed up the evidence. He said this was not a case of sudden impulse, nor were the acts those of a maniac, or of a fatuous person, or of a monomaniac. The act was that of a person of constitutionally weak intellect, and the question for the jury to decide (and they were the best judges) was, whether this weakness existed to such an extent as to render the prisoner incapable, by reason of mental defect, of knowing what he was doing,—of knowing that he was doing what was wrong; or, if he did know these things, of restraining himself. His Lordship then referred to the law of insanity, and recognised it as contained in the opinions of the English judges, given in answer to questions by the House of Lords in 1843, and as illustrated by the case of Gibson, tried for fire-raising at Edinburgh in 1844, and the case of Scott, tried for murder at Glasgow in 1853. It lay with the prisoner to make out his insanity, and if he left it doubtful the Crown must get the benefit of the doubt. He then went over a large portion of the evidence, commenting on it as he proceeded. The jury would give weight to the opinions of the medical gentlemen who had been examined; but whatever view these gentlemen took of that evidence, they could not be relieved from the duty of framing their own opinions and giving their own judgment on the question of the sanity or insanity of the prisoner, which they would form from a consideration of the *whole* of the evidence which had been laid before them. If the jury should be of opinion that, although the evidence did not disclose a case of insanity, it showed very great mental deficiency, the jury might accompany their verdict with a recommendation to mercy, which, as in Scott's case, might possibly have the effect of saving the prisoner's life.

The jury retired, and, after an absence of about twenty minutes, brought in the following as their verdict:—The jury unanimously find the panel guilty as libelled, but, owing to the weakness of his intellect, strongly recommend him to mercy. Sentence of death was thereafter pronounced upon the prisoner. It has since been commuted into penal servitude for life. We have the authority of the journals for the statement, that, on the Lord Provost of Glasgow communicating the commutation of sentence to the prisoner, he exhibited no degree of feeling of any kind whatever.

## DR PAUL OF ELGIN.

We regret to have to announce the death of Dr Paul of Elgin, which took place in London on the 11th of February. Dr Paul deservedly stood high in the profession, being particularly eminent as a surgeon. He had enjoyed for many years one of the most extensive practices in the North of Scotland.

## DEATH OF DR BALY.

We record with deep regret the death of Dr Baly, which resulted from an accident on the South-Western Railway, on Monday, the 28th of January. Dr Baly had attended, as usual, at St Bartholomew's Hospital in the afternoon, when he casually mentioned that he had received a telegram summoning him to Guildford. He drove to the Waterloo Station, and started by an express train at ten minutes past five. The train proceeded in safety as far as the Epsom Junction, about nine miles from London, where the tender and several carriages were thrown off the lines and rolled down a bank about twenty feet high. Dr Baly appears to have been thrown out of the carriage in which he was sitting, and to have been crushed by the carriage immediately following. The funeral took place at Kensal-Green Cemetery, on Monday, the 4th of February.

The lamented physician, whose sudden death we have thus briefly recorded, was no ordinary man; and we desire, if possible, to recall, for the sake of our readers, some of the more prominent features of his rare and estimable character. In doing so, we would avoid and resist the too common tendency to heap praise and panegyric upon the deceased at the expense of that truth and accuracy of delineation which alone can benefit the living, while the lessons are missed which an honest regard to the individuality of the man is fitted to convey. At the same time, an intimate and uninterrupted friendship with him, extending over more than a quarter of a century, makes us shrink from the smallest approach towards anything like undue colouring or exaggeration; for, if William Baly himself was signalized by one characteristic more than another, it was by the calm, clear, unflinching truthfulness of his statements, and by the logical honesty and precision of his deductions.

Our first acquaintance with him was in the summer of 1833, when, having served an apprenticeship with Mr Ingle, an eminent practitioner in Lynn, in Norfolk, his native town, he was attending Dr Robert Grant's class of Natural History in University College, London, and the wards, both medical and surgical, of St Bartholomew's Hospital. His appearance at that time, when he was probably little more than nineteen, is not obliterated from our memory by the gradual changes of intervening years. Below rather than above the middle height, with a youthful figure, a pale but pleasant countenance, expressive of intelligence, good temper, and self-denial, and, above all, of that collectedness of mind and self-reliance which even then, young as he was, gave him a place and influence among the senior students, dressers, and house-surgeons, which they all felt to be genuine. Those of his cotemporaries who are still alive will cordially admit, that the quiet, gentle, unobtrusive but earnest student with the dark hair and broad, massive brow, who had recently appeared among them, was even then taking his acknowledged place as a *born* consulting physician; for he was very soon recognised by his compeers as an authority in all cases amongst the out-patients that required careful diagnosis and more than common consideration. His tastes at that time, as afterwards, led him chiefly to the medical wards, where he was a trusted pupil and friend of that prince of clinical teachers, Dr Latham; but, during the winter session 1833–4, he was also a dresser under Mr Lawrence, whom, in common with all his fellow-students, he held in the highest estimation. After taking his diploma at Surgeons' Hall, he left Bartholomew's for a time, and repaired to Paris for the winter and spring of 1834–5. There he devoted himself, in the most zealous and intelligent manner, to the prosecution of his professional studies; and the writer has at this moment before him two very long letters, such as foreign letters used to be before the time of penny postages, giving a minute and interesting account of all his plans and proceedings. He seems to have availed himself of opportunities of every kind with remarkable diligence; for, fully occupied as he was with pursuits strictly professional, he mentions that he had "visited all the principal quarries within a circuit of ten miles, for the purpose of seeing the strata of the far-famed Paris basin, one of the sources from which Cuvier drew his giant reputation." From Paris he went to Heidelberg, where he spent two months. The following winter was devoted to Berlin. There he graduated as M.D., and acquired that thorough knowledge of the language which enabled him shortly afterwards to undertake the arduous labour of translating into English, with large and valuable additions in the form of original notes, the voluminous and standard work of J. Müller on Physiology. It is unnecessary to remind our readers of the very able and successful manner in which this great task was accomplished. The first volume appeared in 1838, the second in 1842, and a large appendix of original important matter in 1848.

Having rapidly traced our departed friend during the years of his studentship, we find him once more in the great metropolis, entering upon the unknown future of professional life, with no other friends to help him than those whom his own talents and amiable qualities had already gathered round him. We can merely enumerate a few of the landmarks by which his onward and upward progress was made visible to his friends at a distance; for it is superfluous to say that his habits of persevering labour in both the science and the art of his profession were never relaxed, and that an opinion early formed by all who knew him best, that he would inevitably attain to the highest eminence and practical skill, was every year receiving additional strength and confirmation. First, as we have seen, came his translation of Müller; then his appointment, in 1841, as Physician to the Millbank Penitentiary; then, in 1845, his very able and elaborate paper, occupying 160 pages of the *Medico-Chirurgical Transactions*, upon the Mortality in Prisons; this was followed, in 1847, by his Gulstonian Lectures on Dysentery, before the College of Physicians; and, in 1854, by a Report, drawn up at the instance of the same learned body, upon the Cause and Mode of Diffusion of Epidemic Cholera, a work of great labour and research, extending to nearly 350 octavo pages, and profusely illustrated by maps and diagrams. For many years he had lectured on Medical Jurisprudence, with great acceptance, at St Bartholomew's. After a keen contest he was appointed one of the assistant-physicians to that Hospital in 1854; and in the following year, we believe, became associated with Dr Burrows in teaching the Practice of Physic. These successive steps of advancement, and various indications of the confidence reposed in him by persons in authority—among which may be mentioned his being sent out by Government, some years ago, to inquire into certain sanitary questions connected with Gibraltar—prevented his friends from feeling much surprise when, less than two years ago, he was called, at the early age of forty-five, to the distinguished and highly responsible position of Physician Extraordinary to her Majesty the Queen. We know, on the best of all testimony—his own—that this high honour came upon him in the most unexpected manner, and before he had ever ventured to aspire to it.

This cursory review of Dr Baly's brief but brilliant professional history is all that can be attempted here; we leave it to others who are better qualified, to enter into a more detailed account of his scientific and professional attainments. We desire, before concluding our short notice, to speak of him, for a little, as a man and a friend. It is more in these aspects of his character, we feel assured, than as a learned and accomplished physician, that those who really knew and understood Dr Baly will remember him. What he was as a youth, he continued to be to the last day of his life. The first impression which he awakened in the mind of a stranger was always favourable; for, without being too frank and ready to be at home with every one, he was far from stiff or inaccessible, and had invariably a pleasant look and smile, which put even the most shy and reserved completely at their ease. And any one possessing any power of discerning character felt almost instinctively that the man to whom he was introduced was well worthy of being cultivated, and, at the same time, a shrewd observer of men and manners. This latter faculty, in truth, was strongly developed in our friend; and we have often admired the rapid unerring diagnosis by which the mental and moral character of new acquaintances was conclusively formed and settled in his mind. When this sagacity is joined with less amenity of disposition than he possessed by nature, it seldom constitutes a good cement for friendship; but meeting, as it did in him, with soundness and sobriety of mind, and a warm, loving heart, it imparted a raciness and reality to his companionship altogether delightful. You felt that your companion could discriminate among individuals free from prejudice, and therefore you valued his friendship much more highly than if his habit had been to look upon all his associates with the same uniform complacency and approbation. And this conviction on the part of his friends produced, doubtless, a good effect upon them; because we become almost inevitably more circumspect in our sayings and doings in the presence of a clear-sighted, genuine man, who is himself habitually actuated by sound judgment and right feeling.

Although unmarried, Dr Baly was remarkable for his home tastes and his warm domestic feelings. He had a great liking for the young, and took pleasure in anticipating their wishes, and showing them kindness; and as he understood them thoroughly, the love was always reciprocated. In connection with this we may mention, as characteristic of his genial disposition, the very decided appreciation which he had for the beautiful, both in nature and art, but especially in the former. He thoroughly entered into and enjoyed fine scenery of every kind; and his letters generally contained either some allusions to such pleasures formerly experienced, or some anticipation for the future, when his annual short holiday would again set him free for his favourite recreation of visiting new scenes in company with a congenial friend. Alas! how many of these plans and anticipations must now remain for ever unrealized!

A truer, steadier friend never existed. Once a friend, always a friend, seemed to be his motto; and, therefore, we have no doubt that many in all parts of the country are feeling at this moment as if one of the goodliest vessels, in whose pleasant company they had been for years and years crossing the troubled sea of time, were suddenly and mysteriously submerged before their eyes, and the future voyage rendered comparatively dark and dreary. In such circumstances, our thoughts are inevitably carried forwards beyond that clouded sea to the haven of rest and sunshine which lies beyond. He whom we mourn repeatedly expressed in general terms the interest which he took in the most vital of all subjects; but being by nature reserved, and afraid of everything bordering on pretence, he was constitutionally disinclined for speaking much about it, even to his intimate friends. He was at all times more a doer than a speaker; and we have reason to know that he often, even when unsolicited, gave his pecuniary aid in helping on the cause of gospel truth, in scenes apparently far removed from his own sphere of duty. And we have often come to the conclusion, that, making every allowance for excellence of temper and mental constitution, a character and life every way so estimable must have rested essentially upon the only sure and solid foundation. With these thoughts regarding him, we now fondly hope and believe that our much valued friend and brother, when hurried away so abruptly on that sad afternoon, was graciously ushered into the presence of that Divine Saviour whom on earth he trusted and quietly sought to imitate.

## THE LATE MR JOHN F. MACFARLAN.

We record, with much regret, the death of Mr John F. Macfarlan of Edinburgh, which took place on the 20th February, at the age of seventy. During his long and active life, Mr Macfarlan had taken a prominent part in general and local politics, and was for many years a leading member of the Town Council and the Chamber of Commerce. Besides the general esteem in which he was held in Edinburgh, Mr Macfarlan will be more especially remembered by medical men, in nearly all parts of the world, from his long and intimate connection with the Royal Medical Society of Edinburgh. He joined the Society in the year 1818, and was elected one of the annual presidents in 1822; and, in 1850, he had the high distinction conferred on him of being appointed an honorary member. For the last thirty-three years Mr Macfarlan filled, without interruption, the office of treasurer, and contributed largely to the prosperity of the Society, by his careful superintendence of its property and funds, and the deep interest which he took in all its affairs. Especially at the time of the removal of the Society from their building in Surgeon Square to their present house in Melbourne Place, he took a very active part in the excellent arrangements which were made for the accommodation of the valuable library, and in planning the present spacious hall, in which the ordinary meetings are held. Many years ago the Society presented Mr Macfarlan with a gold medal, in testimony of their esteem, and the members took frequent opportunities of expressing their sense of his services; his presence, at the meetings, was always specially recognised and warmly welcomed. By his death the Society has sustained the loss of a most devoted and much valued office-bearer.

Since the Medical Act came into operation, Mr Macfarlan was appointed by the Pharmaceutical Society a member of the Committee for the preparation of the National Pharmacopœia, and continued his services till his last illness.

## VARIETIES.

Physician Extraordinary to the Queen.—We learn from the *Gazette* that Dr William Jenner has been appointed Physician Extraordinary to the Queen, in the room of the late Dr Baly.

Dr Walter Dickson, son of the late Mr Thomas Dickson, Edinburgh, surgeon on board the "Chesapeake," the flagship of Admiral Hope, has been recommended for the Blane medal, in consideration of his valuable services.

Dr Jacob.—The medal which it was some months ago resolved to have struck in honour of this gentleman is now completed and in course of being issued. Dr Jacob having rendered so many services to the medical profession in his capacity as proprietor and editor of the *Dublin Medical Press*, and as a teacher in Trinity College and the Royal College of Surgeons for a great many years, besides being the author of many valuable papers and works on diseases of the eye, it was considered by his medical brethren that some lasting testimonial should be presented to him. It was proposed to present him with a service of plate of considerable value. This he most disinterestedly declined, and it was then determined to have a medal struck to commemorate his services to science and the medical profession. In the carrying of this intention into effect a delay occurred, owing to an accident to the die; but this having been remedied, the medal is now completed. It is of bronze, and something over three inches in diameter. On one side it bears a likeness of the Doctor, with the word "Jacob," and on the other the following inscription :—

"Arthur Jacob, M.D., F.R.C.S., Prof. of Anat. and Phys., Roy. Coll. of Surg. in Ireland.

"In commemoration of eminent services rendered to Science and the Medical Profession in Ireland, 1860."

By those who know Dr Jacob, the likeness is stated to be perfect, and the inscription and other portions of the medal are most creditably executed. It will, there can be no doubt, be highly valued as a well-deserved tribute to and interesting memento of an eminent man.—*Cork Constitution.*

Hospitals of Paris.—According to M. Husson, Director of Public Assistance in Paris, there are in the hospitals and infirmaries of the Poor's Houses (Hospices) 7877 beds, set apart for the treatment of patients, viz. :—

| | | |
|---|---|---|
| In the Hospitals— | | |
| Medicine, | 5,031 | 7,178 |
| Surgery, | 2,147 | |
| In the Poor's Houses— | | |
| Medicine, | 546 | 699 |
| Surgery, | 153 | |
| Total, | | 7,877 |

The beds in the Hospitals are distributed as follows :—

| | |
|---|---|
| Medicine, | 3,250 |
| Surgery, | 1,706 |
| Midwifery, | 577 |
| Skin Diseases, | 933 |
| Venereal Diseases, | 612 |
| | 7,178 |

(There is an error in the column for hundreds in this table.)

In 1859, there were treated in the Hospital and Poor's Houses 96,082 patients, viz. :—

| | |
|---|---|
| In the Hospitals, | 90,996 |
| In the Poor's Houses, | 5,086 |
| Total, | 96,082 |

—*Rév. de Thér. Méd. Chir.*, Jan. 1861.

Treatment of Drunkenness.—Everybody knows that a few drops of ammonia, in a glass of sugar and water, dissipate commencing intoxication. But ammonia is not to be met with everywhere; and, besides, its good effects appear to be confined to cases where the drunkenness has been produced by liquids containing a certain quantity of acid, such as claret, champagne, white wines, and the like. A little pamphlet, by M. Lecœur of Caen, recommends sugar, as in every respect superior to ammonia for producing the end in question. M. Lecœur has recommended, and administers with success, in cases of intoxication, pieces of simple crystallized sugar, of a moderate size, and from five to ten in number. If the *patients* are able to cranch them, the state of inebriety is dissipated as if by enchantment.—*French Paper.*

Arsenic-eating in Styria.—At the ordinary meeting of the Manchester Philosophical Society, held on the 30th of October—Dr J. P. Joule, president, in the chair—a paper was read by Dr H. E. Roscoe, entitled, "On the Alleged Practice of Arsenic-eating in Styria." Professor Roscoe, being anxious to obtain definite information respecting the extraordinary statements of Von Tschudi, quoted by Johnston in his *Chemistry of Common Life*, that persons in Styria are in the habit of regularly taking doses of arsenious acid, varying in quantity from two to five grains daily, was supplied, through the kindness of his friend, Professor Pebal, of Lemberg, with a series of letters, written by seventeen medical men of Styria, to the Government medical inspector at Grätz, concerning the alleged practice. After reviewing the opinions of Dr Taylor, Mr Kesteven, and Mr Heisch, upon the subject, and having mentioned the results and conclusions arrived at by those who had previously interested themselves with the subject, Mr Roscoe stated, that all the letters received from the medical men in Styria agree in acknowledging the general prevalence of a belief, that certain persons are in the habit of continually taking arsenic in quantities usually supposed sufficient to produce death. Many of the reporting medical men had no experience of the practice; others describe certain cases of arsenic-eating which have not come under their personal notice, but which they have been told of by trustworthy people, whose names are given; while others, again, report upon cases which they themselves have observed. Professor Roscoe proceeded to bring forward, in the first place, evidence bearing upon the question,—Is or is not arsenious acid, or arsenic in any other form, well known to and distributed among the people of Styria? He said that he had received six grains of a white substance forwarded by Professor Gottlieb, in Grätz, accompanied by a certificate from the district judge of Knittelfeld, in Styria, stating that this substance was brought to him by a peasant woman, who told him that she had seen a farm labourer eating it, and that she had given it up to justice to put a stop to so evil a practice. An accurate chemical analysis showed that the substance was pure arsenious acid. Extracts from many of the reports of the medical men were then read, all stating that arsenious acid, called "Hidrach" by the Styrian peasants, is well known and widely distributed in that country. The second question to which Mr Roscoe sought to obtain an answer, was, whether arsenic is or is not regularly taken by persons in Styria, in quantities usually supposed to produce immediate death? The most narrowly examined, and therefore the most interesting case of arsenic-eating, is one recorded by Dr Schäfer. In presence of Dr Knappe, of Oberzehring, a man 30 years of age, and in robust health, ate, on the 22d of February 1860, a piece of arsenious acid, weighing 4½ grains; and on the 23d another piece, weighing 5½ grains. His urine was carefully examined, and shown to contain arsenic; on the 24th he went away in his usual health. He informed Dr Knappe, that he was in the habit of taking the above quantities three or four times each week. A number of other cases, witnessed by the medical men themselves, of persons eating arsenic, were then detailed. Dr Holler, of Hartberg, says, that he and other persons, named in his report, guarantee that they are together acquainted with forty persons who eat arsenic; and Dr Forcher, of Grätz, gives a list of eleven people in his neighbourhood, who indulge in the practice. Professor Roscoe did not think it necessary to translate the reports *in extenso;* he gave extracts containing the portions immediately bearing upon the two questions at issue, and deposited authentic copies of the original reports with the society, for the purpose of reference. He concluded, that decisive evidence had, in his opinion, been brought forward, not only to prove that arsenic is well known and widely distributed in Styria, but that it is likewise regularly eaten, for what purpose he did not at the moment investigate, in quantities usually considered sufficient to produce immediate death.—*Mechanics' Magazine.*

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# Part First.

## ORIGINAL COMMUNICATIONS.

### ARTICLE I.—*On the Radical Cure of Reducible Hernia.* By JAMES SYME, Esq., Professor of Clinical Surgery in the University of Edinburgh.

AT the meeting of the Medico-Chirurgical Society of Edinburgh, held on the 6th March 1861, Professor Syme introduced a patient who had been suffering from reducible inguinal hernia, and on whom he had lately operated with success.

The members of the Society (said Mr Syme) were well aware that the radical cure of reducible hernia had long been regarded as a most important desideratum in surgical practice, and that many means of attaining this end had been proposed, which had not, however, turned out satisfactory. Professor Wützer had more recently proposed a more effectual method, the only objection to which was the complexity of the apparatus required, which placed it out of the reach of many practitioners, and at the same time rendered it difficult of application. Mr Syme had now to bring before the Society a mode of accomplishing the object, more simple than the plan of Mr Wützer, and he believed more effectual.

Mr Syme would first remind the Society that Mr Wützer's operation consisted in invaginating or pressing up a piece of integument so as to cause it to occupy the inguinal canal, and in retaining it there by means of a needle until adhesions had formed, when the invaginated part acted like the cushion of a truss, and confined the bowel within the abdomen. The apparatus by which this was accomplished was very complicated. When its different parts had been put together, the instrument (smeared with an irritating ointment) was introduced up the external ring; a long needle was passed through it, so as to penetrate the invaginated integument and the parietes of the abdomen, where it was retained by means of a guard; after which, another part of the instrument was employed to compress the parts concerned. Not only was the apparatus very complicated, but it was by no means easy or certain to introduce the instrument fairly within the external ring.

Since this method had been proposed, various modifications of the apparatus had been suggested, but certainly not with the effect of simplifying it.

The plan which Mr Syme had now to recommend was of the simplest character. Instead of a complicated apparatus for filling up the inguinal canal, the surgeon only required an elongated body of some kind, such as a piece of bougie, a piece of an œsophagus tube, a bit of wood, or even part of a wax or tallow candle; all the preparation required was, that a hole should be drilled through one end of the body chosen. The remaining apparatus consisted of a piece of strong thread and a needle, such as is used in sewing up dead bodies. The mode of application was as follows:—The string was passed through the hole in the end of the body; the needle was threaded with one end of the string, and laid with its concavity resting on the forefinger of the left hand, which was then passed up along the cord within the external ring; the needle was then turned round, so as to bring its point upwards, and passed, with an inclination to the left, through the textures, and brought out on the surface of the abdomen; the other end of the thread was then passed through the parietes in the same way, only that this time the inclination of the needle was to the right; the two threads were then pulled tight enough to draw the body up the canal, and up it must go. The piece of tube, as in Mr Wützer's operation, was smeared with cantharides ointment, to irritate the skin and favour the formation of adhesions. The two ends of the thread were then tied together; and, to prevent any chance of cutting through the skin too fast, a bit of elastic bougie was placed below them. For three or four days, or a week, a compress was placed over the groin, and retained in position by a bandage; and this was the whole process.

Mr Syme presented to the Society a patient on whom the above operation had recently been performed. He was a seaman, 21 years of age, and had suffered from inguinal hernia for two years. The aperture was wide, and the tendency to protrusion very strong; it was, therefore, in every way very desirable that a radical cure should be effected. The patient was admitted on the 30th of last January; the operation was performed on the 1st of February; the tube was removed on the 11th; on the 25th the patient was up and walking about the ward, and had done so ever since. No truss had been worn till this evening; but, as the patient had some distance to come, Mr Syme had thought it advisable to use the precaution of having one applied. The members of the Society might satisfy themselves that there was now no tendency to protrusion, no impulse on coughing, and that the parts concerned felt firm and indurated. The object of the operation had, in short, been perfectly attained, and the finger could be introduced nearly to its whole length up the invaginated portion which still retained its place. How far the cure in such cases would be permanent, Mr Syme was not prepared to say; M^r^ Wützer must be responsible for the permanency of the result. What Mr Syme had done was to facilitate the operative procedure, and to attain M^r^ Wützer's object in the simplest way, and with means which every surgeon had in his possession. An objection had been made to the operation on the ground that it excited too much irritation; but this very irritation was useful in exciting such an amount of adhesive action as was required.

Mr Syme added, that the above was not the first case in which he had operated; but that he had done so repeatedly, and in no case with any bad effect.

## ARTICLE II.—*The Legal Relations of Insanity.* By DAVID SKAE, M.D., F.R.C.S., Physician to the Royal Edinburgh Asylum.

(*Read before the Royal College of Surgeons, March* 1, 1861.)

IT was with great reluctance and diffidence, arising from a conviction of my inability to deliver any lecture worthy of this Hall, and of this distinguished audience, that I acceded to the request of our President to address you upon this occasion.

Having avowed this diffidence, I cannot evade another source of embarrassment, when I contemplate the subject of my address and the nature of my audience. A lecture on the *legal* relations of insanity by a doctor of medicine, addressed to an audience consisting of distinguished *lawyers*. Here is a piece of impudence for one who talks of diffidence—a *doctor* forsooth, too, undertaking to lecture *lawyers* upon *law*,—upon the legal relations of insanity!

I hasten to disembarrass myself from this imputation at the outset of my address, by assuring you that I do not intend to offer you any *legal advice*, and that I am far from having the presumption to say what the law should be in regard to the insane in their various relations. What I propose for myself is to bring before you the numerous and serious difficulties surrounding this subject, as seen from a physician's point of view, to show how these difficulties arise, to suggest how they may be obviated, and to leave my suggestions, the results of a somewhat enlarged and prolonged experience, to germinate into such practical results as the occasion, the audience, and the importance of them may produce.

Before plunging into these difficulties, I think it will tend very much to simplify the whole subject, and to render my remarks on the means of obviating these difficulties more intelligible, if I first determine what *insanity* really *is*.

I shall not encumber this address with a metaphysical inquiry into the connection between mind and matter—the immateriality of mind—the possibility of disease affecting an immaterial entity, and so forth. Nor shall I weary you by a prolonged examination of the various definitions of insanity that have been given by different learned authorities. I propose to view the subject in a simple, practical, common-sense way—a way in which our countrymen have gained some credit for dealing with metaphysics, and in which I would gladly follow.

Now, I presume it will be conceded by every one that insanity is a *disease;* that this is universally admitted, appears evident from the fact, that it is everywhere considered the province of the physician to treat it. Nor will it be objected to for a moment, if I go farther and say that it is universally acknowledged that insanity is a *disease* affecting the *mind;* the synonyms for insanity, "mental derangement," "unsoundness of mind," "mental alienation," and others, are sufficient to establish this. I may even go one step further still, and say that it will be admitted by every one at the present day, that insanity is a *disease* of the *brain* affecting the *mind.*

I do not stop to inquire whether phrenology is true—or what part the brain plays in the exercise of thought and feeling—or whether the mind is a separate entity—or thoughts and passions merely the functions or products of a material organ. I think all such inquiries are beside the question in its practical relations; and I think I may, without compromising any theories of mind and brain, assume that it will be admitted by all parties, medical, metaphysical, and neither, that *insanity* is a *disease of the brain affecting the mind.*

I may state here, parenthetically, my belief that there is sufficient evidence to be derived from the *post-mortem* examinations of the brains of those who have died insane, in a vast majority of cases, of *actual disease* of that organ. I may add that our imperfect knowledge as yet of the minute or microscopic anatomy of the healthy brain, is still such as to render us unable to say whether there is not disease of the brain in *every case.* I do not, however, insist on this point; it may be that in some cases there is merely a disease affecting the functional activity of the organ which may be more or less active than is natural, or there may be a poison circulating in the blood.

Whichever of these theories may be adopted, none of them affect the simple and generally received definition of insanity we have arrived at, namely, that insanity is a *disease of the brain affecting the mind.*

I think I hear some one saying—"Well! what of that? Who doubts it? What have you got, admitting this very simple proposition which nobody ever denied? Tell us something more of insanity,—what particular affection of the mind is it that constitutes insanity? I hear another gentleman remarking, at least he did so to me a few days ago,—You asylum doctors, or alienists, or psychological or psychopathic physicians, as you now call yourselves, would make us all mad together; I believe you or Dr Browne would send any of us to an asylum. If a man drinks hard, he is a dipsomaniac; if he eats too much, and gets bilious, and disgusted with the world, he is suicidal and dangerous; if he shoots or massacres any one in cold blood, he is a moral lunatic, a homicidal maniac, and has an irresistible impulse;—why, you have elevated every species of vice into the rank of a disease: fire-raising, theft, and rape are nothing now but various forms of madness known to medical men as pyromania, kleptomania, and satyriasis. Pray what good does your definition of insanity do towards clearing you of these charges of folly? I hope it does not include all these acts as madness. I do not doubt that insanity is a disease of the brain affecting the mind; but how does it affect it? What affection of it constitutes insanity?—for if all these acts are proofs of insanity, I must demur to your own soundness of mind.

To this category of questions I answer briefly, that I shall tell you a good deal presently about the nature and kinds of mental affections which are produced by this disease; but, in the first place, I would point out, that I have gained a great deal by my definition, brief and meagre as it still appears to be. Enough, I think, to enable us to meet those aspersions upon the medical profession, and on alienists in particular, as to their making out everybody to be mad, and every foolish, vicious, or criminal act to be a proof of madness. I think, moreover, that, simple and obvious as my proposition appears to be, it contains within it a point too often overlooked in questions regarding insanity, both by lawyers and physicians. It seems to be too generally imagined that the evidence of insanity depends solely upon the proof of the existence of one or more delusions, or of some one particular mental state or extraordinary propensity or unnatural habit. And those who are disposed to deny the insanity naturally say,—Why, many learned and sane men have believed in more absurd things: does not this man believe in ghosts, and that one in mesmerism, and that other in homœopathy? Was not Galileo deemed a madman because he believed the earth went round the sun? Is it because a man has peculiar ideas on religious subjects that he is to be accounted insane? What wild and incredible notions have not been entertained in all ages on these subjects by men whose sanity no one questions?

And, again, in reference to extravagant or peculiar or vicious habits, it is said, if you once admit these to be proofs of insanity, there is an end to all distinction between vice and virtue, and to all criminal responsibility.

Now, my position is this, that insanity is a disease—a disease of the brain; and that, of those mental delusions and peculiar habits spoken of, unless they are proved to be symptoms of that disease, I do not profess to have anything to do with them. If, however, I can prove that they are in any instances symptoms of a disease of the brain, then I claim the subjects of them as cases of insanity or unsoundness of mind, and as proper objects for medical care and treatment.

I profess myself—speaking for the profession at large—to be able to distinguish *diseases* when I see them. I contend that we know our profession better than to confound eccentricity, or peculiar tenets, crotchets, or beliefs, with the delusions of the insane. I should be sorry to think that I could not distinguish drunkenness, or thieving, or any other vice, from a disease of the brain, of which these propensities formed only part of the symptoms. I would as soon maintain that a hot skin was scarlatina, or a shivering fit an ague, or a cough an inflammation of the lungs, as I would assert that any one of the symptoms referred to constituted insanity. I hold myself able and bound in every instance to make out the whole features, history, and progress of each case sufficiently to establish my opinion on the sure basis of a scientific diagnosis. I must make out disease, or the case is altogether beyond my province.

Just as, in the illustrations referred to, scarlatina, ague, and pneumonia, it is not a single symptom that proves the existence of any one of these diseases. A hot skin is common to all fevers, a shivering fit precedes many affections besides ague, and a cough is a symptom of fifty diseases besides pneumonia. But in each of these cases a certain concatenation of symptoms enables me with certainty to make out the disease. So in any case of insanity; in very few cases would a single symptom, whether a delusion or an overt act of vice, folly, or extravagance, afford anything more than a mere presumption of madness. In some cases that presumption might rise to a certainty; as, *e.g.*, where a person imagined himself to be the Deity, or the fourth person in the Trinity, or was the subject of some equally absurd and incredible delusion. In many cases the presumption, although not amounting to the value of a pathognomonic symptom, would be very nearly tantamount to one; as, *e.g.*, when a person imagined he was heir to the throne, or possessed of enormous wealth, either of these things being so *obviously incredible* in the circumstances of the particular patient as to afford strong evidence of their being insane delusions. But possibly none of these beliefs might be insane delusions. There are many things that might at first sight appear to be the delusions of insanity which, after all, are not so. I once had a patient placed under my care, of whom it was stated, in evidence of her insanity, that she laboured under the delusion that she was in "the family way"—a statement to which she gave the lie within two hours of her admission by giving birth to a fine boy! (She was, however, really insane, although the belief that she was pregnant was not one of the symptoms of it.)

I had a gentleman placed under my care some time ago, of whom it was affirmed, by one of our most distinguished physicians, in his certificates, that he laboured under "*metallurgic delusions*." In fact, he believed he could extract gold from pebbles, and he busied himself in operations of a quasi-chemical character, with the view of getting this gold. Now, viewing this delusion abstractly, what, it may be said, was there in it affording greater evidence of insanity than was afforded by the labours of the alchemists of the Middle Ages in their search for the philosopher's stone?

Some one would perhaps reply to this question, that the general knowledge of chemistry at the present day, patent at least to all educated men, must have made it obviously absurd—insane, in fact—for any one to expect to find gold in common pebbles.

But to this response I imagine I hear an astute lawyer reply, Why, bless me! did not the late lamented Samuel Brown, an accomplished chemist and a man of rare genius, imagine something far more startling than that? Did he not actually declare that he could transmute sand into a metal more valuable than gold? Was he insane?

Certainly not. Then, why the different inference in the two cases?

To this it would be a satisfactory reply to most minds to say, that in the one instance the experimenter went about his work in an absurd and irrational way—a nonsensical way—showing he knew less about chemistry than the most ordinary of intelligent mortals; whereas, in the other case, the experimenter based his assertion upon a series of careful chemical experiments, conducted according to the rules of the science by one who knew it well, and that his results were professedly explained by a chemical theory of the most alluring, plausible, and philosophical kind.

But my friend and patient would have puzzled you in the argument; for, in his anxiety to relieve himself from the imputation of insanity, he very soon found out enough of chemistry to make even his rude theories and experiments plausible. He soon asserted that he only looked for gold in pebbles containing *quartz;* and he maintained, with great ingenuity, that although he had been obliged simply to boil his chucky-stones in milk and ketchup and vinegar, in a saucepan, to get the gold, he did so because he could not get the proper chemicals, and he hoped that the acids generated by his processes and ingredients might dissolve out the quartz and leave the gold!

Now, I question whether in a debate before a jury, turning on this delusion alone, you would not have succeeded in getting a verdict of sanity for this client.

But to what conclusion does this lead? Why, obviously to this, that it is not any particular alleged delusion, or peculiar or absurd opinion, that constitutes insanity. Such a delusion, or singular and incredible opinion, *is not the disease;* it is only *one of the symptoms* which to a medical man indicate the existence of brain disease—of insanity.

Weighed in the balance before an impartial jury, which of the two assertions of the gentlemen referred to—the one, that he got gold out of quartz by means of acids; and the other, that he transmuted an elementary substance, such as silica, into platinum—would appear most incredible? Undoubtedly the latter. Then, why should we consider the former, and not the latter, a proof of insanity? For these obvious reasons, that in the latter the deduction was the result of a rational and careful and scientific inquiry, and in the former it was the result of diseased action of the brain; it was only one of a great many symptoms indicating and proving *disease.* The belief that gold could be got from common pebbles, was not the *disease*—that belief, or delusion if you like, was not *insanity*—it was only one of the symptoms of it, like the hot skin of scarlet fever or the cough of pneumonia. That disease of the brain, amounting to insanity, affected the gold-seeker in this case, was made out conclusively by a variety of symptoms, all combining to establish this fact as conclusively as the entire concatenation of symptoms and history which go to complete the picture of a scarlet or a typhus fever.

In this particular case, to illustrate the subject more fully, there was the following array of symptoms:—

A gentleman, naturally and habitually of retiring habits, modest and unassuming, amiable, very frugal and temperate, becomes vain and boastful; intrudes himself as a friend and visitor into houses where he is unknown; dines at the mess in the neighbouring barracks, by means of self-introduction; runs about to all the scenes of excitement in the neighbourhood, at all of which he drinks to excess; he makes proposals of marriage; takes a country house, at a rental of L.500 per annum; purchases the carriages, horses, and wine, at a cost of L.600; orders L.200 worth of jewellery, and L.300 worth of paintings. During all this time he is restless and sleepless, unless when narcotized by hard drinking; does not keep his bed above two or three hours, and is up, and full of projects, which vary every hour. A short search for pebbles and a hurried search for gold is followed by the painting, with hair-oil, all the pictures and ornaments that can be got; this, by efforts to polish some of the pebbles; and this, again, by abortive attempts to play the flute or violin, on all of which he thinks himself a proficient, although unable to play a single tune. He will sing any song in any company, and accompany any singer or any orchestra on the piano, although as unable to play either in time or tune as if he had never seen the instrument. Add to these symptoms, great animosity and suspicion against his relatives; a constant craving for stimulants, which he takes every means to obtain in any way,—drinking other people's wine and beer, bartering postage-stamps for it in the absence of money. Add to this craving, the loss of any appreciation of the *meum* and *tuum*,—he borrows a book from one gentleman and makes a present of it to another; copies poetry from obscure authors, and professes it to be his own; produces gold which he has scraped from a sovereign, and asserts that he extracted it from his pebbles. To complete the picture, I might add further details of a more revolting character, but I forbear. I make only one statement more, that this is the fourth attack, and that the previous ones were characterized by similar symptoms; and, on recovery, the gentleman always presented the same natural reserve of character,—visiting no one unless invited; quiet and modest in company; very temperate; extremely frugal, so much so as to spend little more than a third of his income. Such a description completes the natural history of an attack of insanity; in other words, it affords as much evidence to the mind of a physician of the existence of disease affecting the *brain*, and through it the *mind*, as would the entire description and detail of every individual symptom of a case of scarlatina, typhus, or pneumonia give of the existence of any of these diseases. In short, we are as sure of the existence of disease in the one instance as in the other,—our opinion being founded upon medical experience and a review of the entire evidence afforded by all the symptoms of the case.

On precisely the same grounds as in the case of scarlatina or typhus, the physician is permitted to declare authoritatively his opinion, and treat his patients according to the principles of his art, do I contend that, in such a case as that described, he is the proper person to pronounce as to the existence of the *disease* called insanity, and that it is his province and privilege to treat that disease according to the rules of his profession.

Let me illustrate this position in reference to those cases of *moral insanity* to which I have referred. I take only two of the forms of moral insanity which I have named: *kleptomania*, or the insane propensity to *steal;* and *dipsomania*, or insane drinking.

Of the former I remark, briefly, that the cases are comparatively few where it exists as an uncomplicated monomania. It is generally a symptom only occurring in other forms of mania, not unfrequently in the general paralysis of the insane. It was partially developed in the case which I have just described. In all such cases there can be no doubt of its being the result of disease.

There are, however, some well-authenticated instances of persons —one or two of them still alive—who appear to have been otherwise quite sane, and to have conducted themselves in other respects rationally, who showed this propensity under such circumstances as could leave no doubt of its being a *morbid* one. The strength of that presumption in any such case must depend upon the circumstances. But I presume, when a lady of good family and ample means is known habitually to purloin articles of lace or other finery when shopping, and to allow them, without remark or remonstrance, to be sent back next day by her friends, or to be charged unchallenged in her accounts by shopkeepers who are forewarned of her propensities; or when a member of H. M. Privy Council, an able officer of State, of unblemished character in other respects, is known to pocket silver spoons and other articles of plate, where he visits, and allows his pockets to be searched by his valet, and the articles returned to their respective owners without any remonstrance,—I presume it will be admitted, even by the most incredulous opponent of a *moral* insanity, that these persons laboured under morbid propensities, and *quoad* these propensities were *insane.* I claim even such cases as coming within the province of the physician as *diseases.* I do not assert that they require seclusion in an asylum, or any special medical treatment; but I certainly claim them for protection, and protest against their being taken before the police magistrate.

It may be allowed that there must be difficulty, in some such instances, in distinguishing between insanity and mere eccentricity; but in reference to all these monomaniacs (and they are very few), where there seems to be only a single insane delusion or a single morbid propensity, like that of theft, I would remark, as was long ago pointed out by Georget and afterwards by Prichard, that "such persons are really more insane than they appear to be, and are ever liable to display perversities both in feeling and action." If we were able to follow those persons into private life, and observe their habits and deportment, we should generally find many other proofs of diseased action of the brain. We should probably find, in the history of the individual, evidence of a hereditary predisposition, of a sudden change and perversion of the moral character and feelings, occurring after some obvious and common cause of insanity; of prolonged fits of gloom and suspicion, or of acts indicating morbid irritability and violence; of altered habits; and, in fine, a chain of symptoms completing the natural history of an attack of that disease of the brain which we call insanity. In some of the cases many of the general symptoms may have subsided or disappeared altogether, and left only a single delusion or morbid propensity, giving the disease the character of a true monomania (Prichard, 28–29). In regard to dipsomania, the only other illustration of a form of moral insanity with which I propose to illustrate my position, I state at once that the existence of such a form of insanity must be determined by the same criterion. If a man steals from the impulse of a natural and rational motive, he is a *thief;* and if he steals from a *morbid* impulse, without any such motive, he is *insane.* So with equal truth it may be asserted, that if a man drinks to excess from natural and obvious motives, or from such motives strengthened into the force of seeming necessities by habit, he is a drunkard; the force of the habit, and the duration of it, makes him nothing more than by habit and repute a drunkard; it does not make him insane. But if he labours under a *disease* which impels him to drink to excess by morbid impulses over which he *has no control,* then I maintain he is insane; his mind is unsound; he is no longer responsible, and is a proper object of medical treatment for the care and cure of the disease which produces those symptoms.

Unless I make out, unmistakeably, by the symptoms and history, the existence of a *disease*—a disease affecting the mind, so as to produce morbid impulses and desires destructive of the powers of self-control and self-government—I admit at once I have no case.

I have no intention of going fully into this subject here—it was much more ably discussed in this Hall by Dr Christison, on a former re-union of this kind, than I could hope to do it. I only wish to illustrate the subject, so far as it serves my present purpose—that of placing insanity in its proper point of view, viz., as a *disease*. I am the more anxious to illustrate this form of insanity from that point of view, as in no instance has it been more frequently overlooked than in such cases. In proof of this I might refer to a recent and very able article on dipsomania, in which it is treated throughout the whole paper as "the VICE of inveterate drunkenness;" and it is only casually and reluctantly conceded, that there may be a few cases where it is the effect of insanity, *i.e.*, of *disease*. Now, I know of no dipsomania unless a *disease* under that name, and do not consider myself as a physician entitled to have anything to do with inveterate drunkards, except in the way of friendly advice, remonstrance, warning, nephalistic lectures, or such other appeals to their moral sense as may move them to amended habits. A man may be carried to bed drunk every night of his adult life, and give no room for any question as to his sanity, or any privilege for interference with his habits in the way of restraint or medical treatment. But if it appears clearly that he is drinking from the influence of disease over which he has no control, and that he is really insane, then I contend he is as much the object of medical treatment, and, if necessary, of constraint, as if his morbid impulses led him to dance about naked, destroy dress and furniture, bedaub his person and his room with filth, and curse and swear without ceasing. He may do all these things without any delusions, and with as perfect a preservation of his intelligence as the insane drinker. If in the latter case he would be regarded as mad by all mankind, and yet labours only under *morbid impulses* and *loss of self-control*, I can see no reason why in the former he should be debarred from the benefits of medical treatment and protection if his *impulses* are really *morbid*, and his loss of self-control as complete.

The only reason that can be offered is, that sane people frequently get drunk; whereas sane people, at least in civilised countries, never perform the fantastic tricks I have described.

True; and that brings us to the marrow of the matter, namely, that, as persons of reputedly sound mind get drunk, it is not always easy to determine when the drinking is the result of insanity, or, in other words, a symptom of diseased brain.

Now, I by no means deny the difficulty in many cases; but that no more relieves me from the responsibility of solving it, if possible, than I am relieved from the responsibility of discovering and treating properly any bodily disorder because it is obscure. Nor is the difficulty of the subject any argument whatever against the existence of such a disease. In many cases there is no difficulty at all; nor would there be any dubiety in the mind of the most casual observer. If a distinguished clergyman, say, of known integrity and proved piety, who had spent a long life with unblemished character, known to be a pattern of temperance and moderation in all things, were suddenly seen rolling along Princes Street in open day in a state of beastly intoxication, I can imagine the whole community would say, Why, the reverend doctor must be ill; there must be something wrong with him. And if, upon inquiry, it were found that he had sustained some great moral shock, or had been overstraining his mental energies; that he had lost sleep, wandered about at night, had become gloomy and irascible, and did many things totally unlike his former self,—beat his wife, for example; put his Bible, or a loaf of bread stuck full of candles, into the fire; and such like acts,—the evidence of diseased cerebral action would, I think, be sufficient to convince any reasonable man. So, in most other cases of this so-called dipsomania, there will be found some obvious cause, such as a blow or fall on the head, the loss of a large quantity of blood, or some other cause; or the drinking is preceded by a sudden change of character, irritability and violence, gloom and despondency, or unusual elation of spirits, and a variety of other symptoms, of which the drinking to excess is perhaps the most prominent, but only *one of many*, all of which indicate brain disease.

It cannot be denied that in some cases, where the disease has supervened upon long-continued habits of tippling or drunkenness, the difficulty of determining when the *habit* passed into a *disease* may often be very great; but, notwithstanding the difficulty, it is not the less certain that the habit may engender the disease, as it may engender any other form of insanity; and that the disease being one which destroys self-control, and renders its subject no longer responsible, he is a proper object of medical treatment and protection. That the existence of *diseased* action can be proved in most of these cases even, by a careful review of the history, habits, symptoms, and the development, in particular, of other morbid impulses and perverted desires, I have no doubt. I cannot at this time amplify illustrations on this subject; but I would conclude it with a remark made by Professor Christison, in the Address referred to, which struck me as singularly apposite, and confirmed by all that I have seen. "Should there be any intelligent member," he said, "of the legal profession who still entertains doubts as to the psychology and law of the subject, let me simply say that I have not hitherto met with any of his brethren who did not surrender his doubts as soon as the insanity of drink-craving was brought home to him in the person of a relative, a ward, or a very intimate friend, so that he could observe for himself all the phenomena."

To revert to the position with which I set out, that the province and duties of the physician in regard to insanity are exactly the same as they are in reference to any bodily disease, such as fever. I would remark, further, that as in the latter case it is our duty to discover disease in its earliest stages—to detect, if possible, the premonitory signs, and prevent its further progress or its spread among others if it is infectious—so, in regard to insanity, it is equally the province of the physician to detect its earliest symptoms or premonitory signs, and equally his privilege and his duty to take measures for the cure or prevention of the disease at this stage, or to guard against its probable consequences to the patient himself or to others.

This point, as we shall presently see, has not only important *practical* relations to the individual himself, but important *legal* relations both to himself and to those who have to regulate his treatment.

The earliest appreciable signs of insanity are generally some marked changes in the temper, the disposition, or the habits. Indeed, of all the features of insanity, morbid emotions, impulses, and feelings, and the loss of control over them, are the most essential and constant. Delusions, illusions, and hallucinations of the senses, are, comparatively speaking, accidental concomitants of the disease; they are generally developed only during its progress, and are sometimes never present at all; but the moral perversion invariably accompanies the invasion of the disease, and seldom, if ever, is absent at any subsequent period.

"The moral alienation," says Esquirol, perhaps the greatest modern authority, "is so constant, that it appears to me to be the proper characteristic of mental derangement. There are madmen in whom it is difficult to discover any trace of hallucination; but there are none in whom the passions and moral affections are not disordered, perverted, or destroyed. I have in this particular met with no exceptions."

It is in these moral changes, therefore, that the earliest traces of insanity are most commonly observed. A person of genial and generous sentiments becomes suddenly morose, taciturn, and penurious; one of frugal habits becomes speculative and prodigal; another, of rigid integrity, is detected in acts of open pilfering; a managing wife is suddenly found to be making purchases out of all proportion to her means or wants; a sober and pious man becomes all at once drunken and licentious, his excesses being gross, open, and unbridled. In another instance, a person of known decision of character becomes suddenly irresolute, wayward, and facile; a modest woman becomes vain and egotistical; an affectionate wife or husband becomes suspicious, jealous, irritable, dangerous;—and so of every conceivable moral perversion that indicates a total change of the natural character, and affords, therefore, a strong presumption of diseased action.

These symptoms are generally accompanied by others of diseased bodily functions, affording to the experienced physician the strongest corroboration of incipient insanity, and in many instances it may even be prognosticated of the most distressing and hopeless kind.

Now, for all such cases I claim for the physician scope and authority to act as he would be enabled and expected to do with an insidious bodily disease or infectious fever, and take steps for their cure while a cure was still practicable, and precautions for the safety of life and property before it was too late.

I think you may possibly imagine I am making much ado about nothing, and say, "Who doubts all that? These are veritable truisms." My object in dwelling so fully on this point will be more apparent presently. But I would first appeal to the daily records in our public press of horrible murders, of suicides, of wives and children having their throats cut by uncontrolled madmen, and numerous other tragedies, in proof that the early detection of brain disease cannot be over-rated. Have we not lost men of rare genius and worth, from ignorance or want of proper appliances for treatment in such cases? How many lives have been lost, how many fortunes dissipated, by ignorance or neglect, or imperfect means of timely interference, it would be impossible to calculate.

I have been consulted by mothers who were terrified to be left alone with their own babes lest they should murder them, and would leave them untended, and walk up and down the streets till their husbands came home, lest in their absence they should be impelled to so horrible an act; by gentlemen, who have implored me to retain them under my care, and who have been found dead within two days. I have known ladies who had submitted for years to threats of their lives from their husbands, without complaint. In one, the lady had habitually to watch an opportunity of placing her husband's loaded pistols in water, to save herself from being shot; in another, the lady was almost daily threatened for years with the carving-knife, which was several times drawn across her throat; in a third, the lady submitted to innumerable barbarities and degradations for a series of years; and in all these cases the disease was concealed by the long-suffering wives, and the husbands were reputed sane and followed their respective avocations for years, until loss of memory in one, extravagant delusions in another, and open drunkenness in the third, led to a disclosure of their condition. Two of these cases terminated in general paralysis.

In illustration of the legal relations of such cases, I shall cite one out of several, from a paper recently read before the Institute of France, by M. A. Brierre de Boismont:—

"A merchant, aged 46 years, whose conduct had always been honourable, was brought to my establishment in 1846 on account of acts of licentiousness of which he had been guilty over a period of half a year, and which were so entirely opposed to his usual habits, that his family, painfully affected by his conduct, thought that it must be attributed to some mental derangement.

"For several months, moreover, he had given himself up to speculations, of which many had failed. Even at the time when attention had been aroused by his disordered actions, nothing in his discourse and manner of living had excited any suspicion of mental disturbance. He visited the Bourse daily, had numerous communications with persons of his calling, but none of them had perceived his mental state, or at least no one had pointed it out.

"When he was brought to me, he neither showed any emotion, nor manifested any astonishment at being transferred to an unknown house. I spoke to him first upon the acts which had led to his being placed under control. He answered, speaking carelessly, and as if the matter did not concern him, 'That alarm had been readily taken, and that everything would be explained!' I interrogated him afterwards about his business, and the position of his affairs. To these questions, which did not seem to surprise him, he to all appearance responded rationally, but somewhat evasively, and gave no explanation. I referred more particularly to certain of the points on which I sought information, and he said, 'My business affairs, like other commercial matters, are both good and bad; I have not to complain of them. My family behaves well to me; my position is satisfactory, and my health is very good.' I attempted to question him more closely, but he then responded, 'I do not know: I cannot call to mind.' Not being able to elicit anything more from him, I terminated the conversation, and he wished me to allow him to visit the Bourse. This request not being acceded to, he left me, as if the refusal were a matter of trifling importance, and went into the garden.

"During this conversation, it was evident to me that the attention was enfeebled, the memory confused, and consciousness modified; but I did not observe either embarrassment of speech, disorder in the movements, or manifest incoherence. I concluded, however, that the man was under the influence of general paralysis; and I stated to his relatives that grave consequences were to be apprehended, not only to his life, but also to his fortune.

"The examination of his books was a thunder-stroke. They were badly kept, showed great omissions, and the only certain information to be obtained from them was, that ruin was imminent. The commercial position of the unfortunate man presently, however, assumed a more serious cast. The judges of the Tribunal of Commerce pronounced on his affairs a verdict of fraudulent bankruptcy, and directed his arrest; and an officer of the Court presented himself at my establishment with the necessary mandate. I conducted him to the patient, in whom, in the space of three weeks, the following changes had taken place. His memory was entirely lost, and he could not respond to any questions put to him. His look was stupid, and his figure immobile. Already embarrassment of the speech might be noted, and feebleness of the legs showed positively that he suffered from general paralysis, and that the habitual excitation of his life had been masked by mechanical movement.

I declared to the officer that in the state in which the patient then was I could not permit him to execute the mandate; and I added, that, from the rapidity with which the affection had proceeded, it was almost certain that a serious termination would very shortly occur. I prepared a certificate to this effect, and forwarded it to the president of the Tribunal of Commerce, and the arrest was adjourned until the re-establishment of the patient's health. Three months afterwards this patient died in the last degree of degradation and marasmus."

In further illustration of the same subject, M. Boismont says, referring to cases where the early symptoms consist of thoughts of great riches and power:—"Several years ago I was consulted by a rich man in whom I quickly recognised the intellectual dispositions spoken of, although he dissimulated very well his infirmity. He was one of those patients who impose upon those around them by their apparent rationality, their specious arguments, and the observation of the habitual proprieties of life. The substratum of variety which I readily discovered, in spite of his rational address, induced me to intimate the peril he was in to his family. I could not advise them to place the patient in an asylum,—indeed, they would not have followed such advice, he as yet speaking so well; but in presence of his physician, a well-informed man, I advised the family to keep upon their guard relative to his fortune. 'Take precautions,' I said, 'against sharpers; they would easily victimize him. The danger is great on his side, and I warn you of it, because I have seen more than one example of this kind.' A year passed before I heard anything more of this gentleman. Then one day he was brought to me, after a scene of violence which had placed one of his relatives in danger. My prediction was verified; it was necessary to make good a deficiency of 200,000 francs.

"The merchant, whose case is related in the sixth observation, had also in the same manner squandered 600,000 francs, and reduced his wife and children to poverty. At the termination of the sitting of the Academy of Sciences, where I had communicated this paper, one of my friends said to me, 'If these facts had been known, my son in-law would not have lost 800,000 francs, ruined my daughter, and left five children to my charge!'"

These cases are sufficient, I think, to illustrate the necessity of placing insanity in its earliest stages under the control and direction of the physician, and of providing him with such powers and privileges in the treatment of the insane as may enable him to meet his responsibilities for the conservation of the lives and fortunes of his fellow-creatures threatened with this distressing malady.

**Definition completed.**

The sketches which I have incidentally made of various forms of insanity will now enable me, I think, to complete my definition of it. I had arrived at the conclusion that it was a disease of the brain affecting the mind. I have to complete this definition by saying how it affects the mind.

My reply is, that emotions and passions are caused by the *disease*, and not by the motives ordinarily calling into action these emotions —that is *moral* insanity—and that in another class of cases ideas are believed in which have no evidence of their truth: they are neither founded on fact, observation, nor memory, and are such as no sane man would entertain as matters of testimony or observation; they are, in fact, morbid fancies and beliefs—ideas caused and believed in by disease.

To reduce my definition to a brief compass, I would say that *insanity is an (apyretic) affection of the brain in which emotions, passions, or desires are excited by* DISEASE (*not by motives*), *or in which* CONCEPTIONS *are mistaken for acts of* PERCEPTION *or* MEMORY.

This definition appears to me to comprise everything. The first part of it defines *moral insanity*, in which the propensities, emotions, and desires alone are *morbidly* excited; and the second part of it defines *intellectual insanity*, in which there are actual delusions or hallucinations, so long considered the essential feature of madness. If I would add anything to this definition, it would be the *loss of self-control* or *self-direction*, which appears to me to be the peculiar characteristic of all forms of insanity,—that loss of self-control over the actions, which permits them to be restless, violent, or extravagant; a loss of control over the passions, which permits them to overrule the judgment and the conscience, and ends in acts of vice, debasement, or violence; a loss of control over the succession of the thoughts, which permits them to be incessant, rapid, and incoherent; a loss of control over the ideas, which precludes the insane from the exercise of comparison and judgment, and leaves them (as D. Stewart remarked), like persons in dreams, to mistake the objects of reverie or imagination for realities. In fact, I know of no designation for insanity which more briefly and correctly distinguishes it than the old Scotch one, namely, a man who has *lost his judgment*.

But I shall not dwell on the metaphysics of insanity: what I am mainly solicitous to bring before you this evening are the practical bearings of the subject.

The first difficulty which meets us in the treatment of the insane is a legal one. When called on to treat any other disease, if we know how to do it, there is nothing to interfere with the discharge of our duty. Even in the case of a dangerous operation, rendered necessary for the salvation of life, if the patient refuses to risk the operation, we can with a good conscience throw the responsibility upon his own shoulders, and, having warned him of the consequences, our duty is fulfilled and our obligations at an end.

But with insanity it is very different. If any steps require to be taken disagreeable to the patient, and in which he refuses to acquiesce, we cannot appeal to his judgment, and leave the consequences on his shoulders, for his judgment is gone, there is none to appeal to; his responsibility is gone with it, and cannot be taken off us. Upon us devolves, when such a case is placed in our hands, all the responsibility, and upon us will fall all the odium of the consequences. We have to bear the upbraiding of friends for ruined fortunes, for suicide, and the reprobation of the entire public should some act of homicide result from neglect or inefficiency on our part.

In the treatment of bodily disease there is rarely any hurry or trepidation, and an appeal to the reason and judgment of the patient leads him at once to act on the advice offered. But with insanity it is far otherwise;—the disease leads the subject of it to commit open acts of seeming vice or folly; acts injurious to himself, to his own interests and those of his family. He threatens his own life, it may be, or that of another; the voice of reason is lost upon him; he obeys the impulses of a disease; and, as he cannot control himself, his acts must be controlled by others; he must be watched and guarded, and in a large majority of cases deprived of personal liberty. How is the physician prepared and armed for this step? Why, in the very worst possible way—in such a way as to hamper and intimidate him, and cause the greatest delay and danger to his patient. Such is the jealousy with which, in this free country, the rights of personal liberty are guarded, that the physician is hedged round with a phalanx of difficulties; in some cases he is barely able to save life, and in many he is rendered impotent to check disease by timely interference, or to prevent family ruin, the dissipation of fortune, or the unbridled indulgence of diseased passions. The physician, and all associated with him in the care of the insane, are looked upon with peculiar suspicion and distrust; and legal difficulties are heaped upon each other, so as to throw impediments in the way at every step, and render the fulfilment of their duties to the patient as hazardous and unpleasant as possible.

In cases of raving madness, by an arbitrary exercise of power the patient may be restrained in his own house or in some private dwelling for a time, under the care, or undue harshness, of nurses; but these, as well as most of the less turbulent forms of insanity, can only be properly restrained in an hospital provided with all the required appliances for the humane and efficient treatment of the malady. To send any one to such an hospital, which I may assume to be necessary in a large proportion of cases, it is necessary first of all to get a *sheriff's warrant*, as if the patient were a *criminal*, and not a *sick man!*

To get this warrant, two medical men must see him; and, so suspicious is the law of collusion, they must see and examine him separately. They are also burdened with disqualifications, which I do not stop to detail. In the midst of the hurry and trepidation, it may be, attendant upon the case, they must state in their certificates the grounds upon which their opinion rests, as the result, first, of their own observation of *facts;* and, second, of the testimony of others; and no certificate is good without *facts* observed by the doctor himself. The agitated and distressed relatives have to fill up two printed documents, and sign them; and any accuracy, even an obvious clerical mistake, made in the hurry and distress of the moment, may invalidate all that has been done. Very often even this stage of the procedure is not arrived at without considerable delay. A second doctor is not always to be had; perhaps, after he comes, the fear of an action of damages leads him to refuse any such certificates, and another is sent for; and very often, as we shall see, although the insanity and even urgency of the case is quite manifest, they find it not easy, from inexperience, to express in a few words such an account of the facts observed by themselves as shall be afterwards by the sheriff satisfactory evidence of insanity.

However, after this is done, the sheriff's warrant must be got; that can only be procured between 10 and 3 on ordinary week days, between 10 and 12 on Saturdays, and not on Sundays at all.

Suppose the sheriff is 30 or 40 miles distant, the paper must be sent to him for his signature.

But the difficulty is only beginning. When the paper reaches the sheriff, there is some fault found: the certificates are not satisfactory—there is some blunder; the petitioner, poor woman, in her hurry, has forgotten to sign her name, or signed it in the wrong place, and the schedule must go back to be corrected. In this way very often a delay of several days takes place, during which the poor patient cannot be controlled. He is either at large, endangering himself and others, or struggling and fighting with some ignorant neighbours in a lodging, perhaps tied with ropes, or getting his ribs fractured, and becoming daily worse, his friends fretting at the expense and anxiety, and cursing the law's delay.

These delays have been partially obviated by a clause which I was fortunate enough to get introduced into the present statute, through the courtesy of the Duke of Argyle, at the eleventh hour, when the bill was passing through the House of Lords. That clause permits patients to be kept 24 hours in an asylum without a warrant, if it is certified by a medical man that it is a case of emergency.[1] Even that, however, only meets the difficulty imperfectly, and only in some places; for, if the sheriff resides at any distance, or if he is dissatisfied with the medical certificates, 24 hours are found insufficient to complete the warrant. Large penalties would be incurred by all parties unless the patient were sent out of the asylum at the end of the 24 hours, to remain in some lodging till the warrant is signed; and this has so often happened, that some asylum superintendents refuse to receive any patients now on these certificates of emergency.

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[1] Since writing the above, I have learned that the clause referred to was suggested by the Royal College of Physicians of Edinburgh, and pressed on the notice of the Lord Advocate, along with other amendments, by a delegate sent to London by the College. The Lord Advocate agreed to the clause in the words proposed by the College; and got the Duke of Argyle, who took charge of the bill in the Lords, to propose it as an amendment. I was led to make the above statement from being told that the Duke of Argyle referred in particular to my letter on the subject when moving the introduction of that clause into the bill.

But the principal cause of delay arises from the circumstance that the sheriffs now generally consider themselves bound to judge whether the facts contained in the medical certificates prove insanity, according to their ideas of it. I am aware that this is not universal: some sheriffs grant warrant, whatever the facts are, considering the medical men responsible, and their solemn certificate of insanity sufficient; but these cases are exceptional.

The result of the present practice is the greatest diversity in different counties, owing to the varied views of insanity entertained by the different sheriffs. So much is this the case, that it is impossible for any medical man who is not acquainted by experience with the practice of the particular sheriff before whom his certificate is to go, to conjecture beforehand whether it will be accepted as sufficient or not.

No delay arises in England (and it was from the English statute that our new form of certificates was copied), because there no sheriff's warrant is required, but only the order of a friend, or, in the case of a pauper, of a justice. There the patient is at once received; and if there is any defect in the medical certificates, they are afterwards returned by the Commissioners in Lunacy to be amended. The practice there is, accordingly, uniform, the judges being always the same.

In Scotland, however, the Commissioners seem to think the sheriff's warrant supersedes their judgment; and as the adjustment of the certificates is thus left to them, and every sheriff has a different standard, medical men are at a loss to know what they may respectively require.

I speak with all respect of the sheriffs; my comments reflect quite as much upon my professional brethren as upon them; but I think it right to state what is the real cause of the difficulties and delays which are so distressing, injurious, and expensive to the insane and their friends.

That I may not be supposed to overstate the case, I shall give one or two facts in illustration:—In several counties the sheriffs grant warrants if the fact stated is simply that the patient is a dipsomaniac; while in others, again, if anything is said about drinking propensities at all, the warrant is refused, even although it should appear in addition on the certificate that the patient has threatened suicide. In these counties, however, where people are allowed to cut their throats, it will be found quite easy to get a warrant if the facts stated are such as the following (I quote from actual warrants):—Facts observed: "Great loquacity and restlessness!" The old women in that county better *look out*. In another, the certificate states, "He has hallucinations, and is likely to *become* suicidal, and his sister is afraid he would *become* outrageous;" and the second doctor certifies, "Sullen taciturnity, and suicidal tendency dreaded;" and "his friends say he appears quiet to strangers, but fear, as in the previous attack, that he *may become troublesome*."

Take another: the facts observed are, "Shakes his head in a curious way!"

Of another it is certified that "he is incoherent in his *appearance!*" I could discover nothing incoherent in this person's appearance except what was occasioned by the want of braces.

There is something more "incoherent in the appearance" of the facts stated in the following certificate for another patient:—"Is exceedingly confused; could not recollect where he resides; his EYE restless and wandering; but following the usual occupation of *breaking stones!*" I think the sheriff who granted a warrant for the first of these cases could have no hesitation in granting one for the doctor who signed the certificate for the second.

I cite only one more, which will astonish my clerical friends. Facts indicating, etc., "wants a Bible, and is anxious about her soul's salvation!" It is to be hoped, I think, for the sake of the ratepayers, that the sheriff who granted a warrant in that case does not reside in a county where revivals are going on!

That warrants should have been procured on such evidence of insanity as was afforded by these certificates, while the greatest delay and difficulty is so often experienced in cases of real urgency, will, I think, satisfy you of the necessity of some improved provision for the confinement of the insane, so as to procure their speedy protection and early treatment.

Did I venture to suggest a remedy for this anomalous and unsatisfactory state of matters, I would have no hesitation in saying that the best thing we could now do would be to adopt the English practice altogether, as we have adopted the English forms of certificates, and do away with the sheriff's warrant. In making this suggestion, I have the satisfaction of knowing that I express the opinion of all the asylum superintendents in Scotland. The effect of it would be not only to obviate all the difficulties and delays described, but it would have the additional recommendation of rendering the Commissioners in Lunacy in Scotland the judges, as in England, of the sufficiency of the medical certificates. We would then have a uniform practice in regard to the nature of the proofs of insanity required, and at the same time a more efficient protection to the patients themselves in a tribunal composed of skilled persons, whose special province was to adjudicate on such points.

This change would also have this great advantage to commend it, that of tending to remove a prejudice, too common in Scotland, that being confined in an asylum under a sheriff's warrant implies criminality and some measure of disgrace,—a feeling which leads the patients to regard the asylum as a prison rather than a home or an hospital. I am constantly asked by my patients, "What have I done?" "What charge can anybody lay against me?" etc. A gentleman of superior intelligence, who had been twice an inmate of the Asylum, lately visited it; and, walking in the grounds with one of his old acquaintances, he said: "It's a nice place this, man; I could come and live here always if it was not that d—d sheriff's warrant!" I need scarcely add, that such a feeling is prejudicial to the happiness and recovery of the patients; and operates to a great extent, especially among the higher classes, so as to prevent removal to asylums till every other means have been tried, and the patient's case has perhaps become hopeless. Under the old practice in Scotland, when the medical certificates simply bore that the patient was insane in the opinion of the certifiers, the warrant of the sheriff could only be a guarantee that the document was signed by qualified medical men; yet, under that *regime*, there is not a shadow of evidence that any one was ever unlawfully confined in a Scottish asylum. The Royal Commission of Inquiry reported that there was not one single instance of unjust detention of any patient met with in any asylum in the country. Under the present statute I think I have cited sufficient evidence to show that the new forms of medical certificates afford no additional guarantee of the propriety of the warrant. In point of fact, the sheriff must rely almost entirely upon the good faith and trustworthiness of the medical men, as he has no means of testing their opinion either by examining them or the patient.

In fine, I cannot help the conviction that the two medical certificates and the order of a relative, as in England, Ireland, America, and elsewhere, is all that is necessary to secure the rights of the subject, burdened as these orders are, and the reception of them in improper cases, by heavy penalties, the surveillance of the Commissioners, and the subsequent risk of actions at law.

But I have not completed the picture of the phalanx of difficulties that harass those who undertake the treatment of the insane.

No sooner is a patient admitted into an asylum than copies of all the papers connected with his confinement must be sent to the Commissioners in Lunacy, *under penalties.* The patient may write and complain to the Commissioners or sheriff as often as he likes; they may visit him and report upon his case, or order his discharge, whenever they think fit. He is visited twice a year by the Commissioners, and he is entitled to be visited by a variety of other persons, to whom he can pour out his complaints, if he has any. All this is quite as it should be; and no physician, conscious of doing his duty, would care to have it otherwise if it would only satisfy the general public that persons were not liable at any hour to be hurried away for the sake of their money, and immured in an asylum on the pretence of insanity, there to be kept during their natural life. Such a thing, if it ever did take place, must have occurred in the bygone days, when the insane were consigned to the custody of ignorant keepers, who speculated for gain upon the public ignorance and neglect of their insane.

It is painful to see so absurd an idea propagated and repeated in our periodicals week after week, where it used to point the horrors of some tragic tale. It is not less painful to know that credence is attached to such suspicions, and that societies have been organized for the protection of lunatics, and efforts made to introduce still more stringent and odious enactments regarding the insane. It has been proposed, and urged upon the House of Commons, to have all cases tried and decided before a magistrate before their reception into asylums. It has been suggested that at least the medical certificates should be verified before a magistrate, who should also examine the patient. It has also been urged, that orders should be granted at first for confinement for three months only, and to require at the end of that period a fresh inquiry and a new order.

It is gratifying to know that the first of these recommendations at least has been condemned, in the Report of the Select Committee of the House, in terms which apply not only very strongly to this point, but to all additional legislation on that part of the subject.

The Report begins with this statement, referring even to the worst conducted private asylums in England :—" Indeed, it may be said that the instances are extremely rare in which, under the present law, the confinement is or has been unwarranted." It goes on to show the evils that would arise from any additional inquiry ; the painful publicity which would be given to an illness which, in many instances, was transient ; the injury to the feelings of the friends and the prospects of his children, or to the business of the patient ; and, above all, the prejudicial influence upon his own condition and chances of recovery by the nature of such an inquiry and the delay occasioned by it.

I remark, further, that after these cumbrous regulations have been complied with ; after the patient has been legally and properly confined ; after he has been visited and examined again and again by the Commissioners in Lunacy, and considered by them a proper object for detention ; after he has been cured of a violent fit of raving madness, and restored to liberty,—the medical men who interposed to save him, and the medical superintendent who tended and cured him, are all liable in an action of damages for depriving him of his liberty. Such actions, as many here know, have been brought where there was not a shadow of evidence of any haste, error, or imprudence in the steps taken, but, on the contrary, distinct proof that all parties had simply been discharging their professional duties, and in the best interests of humanity ; and yet the medical men had to pay large sums of money and make great sacrifices of time in defending themselves from such actions.

I do not offer any suggestions for the removal of this monstrous injury to which we are exposed in the discharge of our professional duties; but I must say it seems a hardship that, while the insane are protected at every step of their treatment by a most jealous system of regulations, and now also by a complete surveillance and court of appeal, the medical men who treat them have no legal protection at all. At every step of their treatment they are exposed to fines or imprisonment for omission of some legal form; and when their patient is cured, neither the sheriff's warrant nor the Commissioner's verdict can save them from vexatious actions at law. During the whole of their professional services to those labouring under the most distressing of all maladies, they are subjected to laws which are a continuous expression of distrust, and which, however conscientiously obeyed, afford them no protection whatever.

I have left myself little time to make any remarks upon the legal relations of the subject as respects the property of the insane, the legal custody of their persons, their capacity to make wills, and their criminal responsibility.

In regard to the first, I can safely content myself by expressing my admiration of that part of our Scottish legal practice which takes care of the property of the insane. The appointment of a *curator bonis* by the Court of Session is a process so simple and so cheap compared with the expensive and, when opposed, ruinous steps required by the English laws, and it affords so complete a security for the property of the insane, that it is, I think, above all commendation.

I cannot pay the same compliment to our laws regarding the custody of the person of lunatics; they are, I think I may now say, *obsolete*. The process of cognition, as you all know, requires the jury to find that the person is either an *idiot*, or *fatuous*, or *furious*. Now, as nobody about whom any such inquisition requires to be made is either an *absolute* idiot, or totally fatuous, or perfectly furious, it results that no jury will find a verdict in any case which is defended. I might refer to the well-known case of David Yoolow, or to the more recent case of Mr Lockhart, in proof of this averment. Indeed, I think it will not be disputed by any lawyer conversant with this and other cases, that in Scotland it is now practically impossible, by the only process the law allows, to get a legal sanction for the care and custody of the person of any one of unsound mind except such custody as an asylum affords, liable, it may be, to the interference of numerous parties having conflicting interests.

I respectfully submit, that, in any revision of the laws regarding insanity, for Scotland, it would be desirable to have some new process for the old and inoperative one of cognition. If that process were simplified, and at the same time if patients were placed in our hospitals on the order of a relative instead of a sheriff's warrant, a double benefit would be conferred on the unhappy subjects of this disease. Those labouring under transient or curable forms of insanity would have the comfort and advantage of feeling that they were going to an hospital merely as invalids, and were not being consigned to a lock-up, like criminals, under a sheriff's warrant; and, on the other hand, those whose prospects were hopeless would have the protection of the law in the disposal of their persons in the manner best suited for their permanent comfort and security.

The subject of *criminal responsibility* would in itself afford ample material for a long lecture. Perhaps you anticipated that this would be my theme; if so, I hope I have not disappointed you. It was necessary for me to approach that subject from my point of view, namely, that insanity is a disease,—from which point alone it can be understood. In this review I have introduced matters of more everyday interest, yet not the less important, as they have been so seldom discussed. I have not yet even hinted at the question of criminal responsibility, because I consider it a separate one from that of simple insanity. If my 670 patients were not responsible beings in a certain sense and to a certain extent, and influenced by moral suasion, they would be more difficult to govern than the Channel Fleet in a storm.

The legal right to treat a patient as insane, either in an asylum or out of one, is a simple question as to the legal powers and privileges of relatives and physicians in such cases; but the confinement in an asylum, in my view of the case, neither disqualifies a man legally for civil acts, nor renders him legally irresponsible for crime. It certainly affords a *presumption* of incapacity or irresponsibility, but one which may be set aside by proof. The difference between the legal position of one out of an asylum and of one in, is simply this,—that the one is presumed to be *sane* until insanity is proved; the other is presumed to be *insane* until sanity is proved. In the one case, insanity must be proved by those who plead it; in the other, the sanity, or that amount of sanity which infers capacity or responsibility, must be proved by those who contend for either. The presumption and the *onus probandi* simply change places.

I do not regret that I have precluded myself from entering at length into this subject, as it has been fully discussed by the medical profession in a number of monographs on the Criminal Responsibility of the Insane, recently published. I shall name only one, the very able Sugden Prize Essay by Dr Bucknill. He takes the same ground as I have taken; and, by a remarkable coincidence, uses nearly the same words in defining insanity as I have used to-night, and have been in the habit of using in my lectures for twenty years. He points out strongly that the real question at issue in every case where insanity is pleaded in defence of criminal acts, is whether the acts of the individual have been the result of *disease*. If this is clearly established, the difficulties respecting the responsibility of the insane are immensely diminished.

Referring to such cases of *moral* insanity as we have had under review, and which are the fruitful source of difficulty in criminal trials where insanity is so often pleaded, Dr Bucknill says,—and with this citation I close my address:—"However interesting it may be to the psychologist to trace the growth of a vicious indulgence in some passion or instinct, through all the gradations of mental habit, until he feels himself satisfied in denominating the result a state of insanity, he must not forget that, in the trials of criminals supposed to be insane, the question is not alone respecting the existence of insanity, but respecting that of irresponsibility also. The man who would claim for a criminal exemption from punishment on the plea of insanity arising from the vicious and uncontrolled indulgence in some passion or emotion, would have to establish not only the existence of such a form of insanity, but to defend two other positions,—namely, that a man is not responsible for conduct resulting from vicious habits of mind, provided the latter gain over him a complete mastery, and compel him, contrary to all dictates of prudence, to actions injurious to society and ruinous to himself; and, secondly, that neither the fear nor the infliction of punishment will prove efficacious in preventing the repetition of such acts.

"It would be a puerile employment to show the untenable nature of such positions; and it must suffice to express in this place our conviction that insanity resulting solely from vicious habits of mind without disease, cannot confer irresponsibility for criminal acts, and that punishment, or, more properly speaking, corrective discipline, is competent to restrain its mischievous manifestations.

"Cicero says that all fools are insane; and Hale, that all criminals are insane; and when folly and criminality have reached their climax and borne their fruits, it is not an edifying spectacle to behold the psychological physician stepping forward for the purpose of claiming immunity for the offender.

"The element of *disease*, therefore, in abnormal conditions of mind is the touchstone of irresponsibility; and the detection of its existence or non-existence is the peculiar, and oftentimes the difficult, task of the psycopathist."[1]

## ARTICLE III.—*Case of Fatal Croup in the Adult; with Remarks.* By J. WARBURTON BEGBIE, M.D., Physician to the Royal Infirmary, and Lecturer on Clinical Medicine.

(*Read to the Medico-Chirurgical Society, March* 6, 1861.)

No feature in the etiology of croup is more interesting than age. It is essentially a disease of childhood. Not only so, but an extended experience in all countries, and by many observers, has distinctly pointed out, that the period for the maximum occurrence of croup is between the second and the seventh year. "Disponunt ad croup," writes Joseph Frank in his wonderful Repertory of Medical Knowledge, "ætas infantilis, et ita quidem, ut primis vitæ mensibus haud communis sit, frequentissimus inter primum et septimum annum."[1] "In no part of Britain, I imagine," remarks Dr Cheyne, "is croup more prevalent than in Leith and its immediate neighbourhood; yet in the course of nearly fifty years of extensive practice, in which he has attended many hundred cases of this disease, my father has not seen one instance of croup occurring after puberty."[2] Although, however, the ages now mentioned do include the season in which croup is infinitely most prone to occur, it is of importance to know that the disease has been observed during the period of lactation, also after puberty, and in adult as well as even senile life. Bretonneau, for example, records the case of a child of a fortnight old, very feeble and small, who died of well-marked croup;[3] Molloy, the case of a child who died at the age of one month;[4] Desessart, a third case fatal at the age of three months.[5] As to the occurrence of croup in the adult, on the other hand, Louis, in 1826, on the occasion of the publication of his well-known and important memoir on the subject, was no doubt justified in stating, that croup is so rare after puberty, and in adult age, as to have escaped the notice of many practitioners, who indeed doubt its existence at that period of life: the recorded observations of croup in subjects who have passed the age of puberty are rare, and such, continues Louis, that the annals of medicine do not contain more than three or four well-authenticated instances during the last fifteen years. Louis himself, in the memoir now referred to,[6] recorded eight instances of croup in the adult, all of which had been observed under the care of different physicians in the Charité, Necker, and Salpêtrière Hospitals at Paris. To some points of interest in these cases, and in Louis' "resumé," I shall have occasion to allude in the sequel. Within a more limited period, other examples of croup occurring in the adult have been placed on record by different observers;—by Charcelay, among French writers, in 1839, in the *Gazette Medicale;* and in this country by Dr Gillespie, whose interesting case, read to this Society in 1850, and published in the *Monthly Journal* for the same year, as well as one recorded in the *Lancet* for 1838, and referred to by Dr Gillespie, have perhaps escaped attention somewhat, from the circumstance of their having been entitled cases of "Laryngo-Tracheitis;" that they were, however, instances of croup occurring in the adult, is just as certain as is the one, the particulars of which I now communicate.

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[1] *Bucknill on the Criminal Responsibility of the Insane.* London, 1857. Pp. 33–35.

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[1] *Praxeos Medicæ Universæ Præcepta.* De Croup.

[2] *The Pathology of the Membrane of the Larynx and Bronchia*, by John Cheyne, M.D., p. 27.

[3] *Des Inflammations spéciales du Tissu Muqueux, et en particulier de la Diphthérite*, etc., p. 36.

[4] and [5] Frank, *loco citato*, p. 114; De Croup. See also *Valleix Guide du Médecin Praticien*, vol. i., p. 159.

[6] *Mémoires ou Recherches Anatomico-Pathologiques*, p. 203. Du Croup considéré chez l'Adulte.

*Alexander Hamilton*, employed in the North British Rubber Manufactory, æt. 39, but having the appearance of being ten years older, was admitted to the Royal Infirmary, under my care, in the month of June 1860. He was then, and had been for some months previously, affected by diabetes. On his admission, he was considerably emaciated, had great thirst, and was passing from 220 to 280 ounces of urine in the course of the day. There was no hereditary tendency to the disease to be discovered in this man's family, and the origination of it in his own case is probably to be ascribed to the extremely intemperate habits in which he had for years indulged. He was a slight-made man, of sanguine temperament, possessing bright-red hair, and light-blue eyes. Under a duly regulated diet, consisting chiefly of animal food with gluten bread, a limited allowance of sugar (which in several instances lately I have found useful), and a restricted indulgence in fluids, the patient, for some time after the commencement of his hospital residence, decidedly improved. He gained flesh, and acquired some measure of strength; the amount of his urine gradually diminished to 160 ounces, and its density from 1·045 steadily fell to 1·034. During this time he had a fair trial of the alkaline plan of treatment; bicarbonate of soda and magnesia being the remedies employed, as well as the Vichy water. Arsenic, in the form of Fowler's solution, he also took; and it was while so doing that the most decided improvement in his appearance, and the greatest increase in flesh, were observed. A pint, and afterwards two pints, of London porter *per diem* were allowed him.

During the extremely cold weather of December, Hamilton had been noticed to have fallen off in appearance. He was in the habit of leaving the hospital occasionally for a walk; he did so on the 30th of December. On the following day he felt some symptoms of cold, but made no complaint till the evening of January the 1st. Dr William Anderson, my resident physician, then found him suffering from sore throat, but without any distinctive character, and by no means violent in degree. Some simple remedies were prescribed; among others, warm poultices of bran to the throat, and the inhalation of steam. On January 2d, the pain in throat had increased considerably, being referred to the larynx and trachea, and slight pressure over both caused great uneasiness; he had difficulty in swallowing, barking cough, with noisy croupal respiration, and was only able to articulate in a whisper. Early in the morning, after a fit of coughing, he had expectorated, along with some thick mucus, a portion of greyish-coloured tough membrane (an inch and a half long by an inch broad). At visit, a careful examination of the mouth and throat was made. The tonsils appeared a little swollen; the uvula elongated, and at its termination œdematous; the upper part of pharynx of a red colour, but no trace of pellicular exudation could be discovered; the nostrils also were quite free. On passing the forefinger down to the epiglottis, it was felt to be raised and tumid. Pulse 120, and small. The application of the warm cloths was ordered to be continued with diligence, and a little wine of ipecacuanha to be administered at short intervals. In the course of some hours, another, but smaller, portion of membrane was expectorated.

In the afternoon of the same day, the dyspnœa had not increased, and no attacks of spasmodic difficulty of breathing had occurred; voice was still more suppressed; a very distinct thrill was communicated to the hand when placed over both fronts of the chest; and on auscultation the vesicular murmur, especially over the left side, was very imperfectly heard. Pulse more feeble. Wine and a little brandy were administered.

At 2 A.M. of January 3d, Dr Anderson was summoned suddenly, to find the patient evidently sinking. He could only with difficulty count the pulse, but noticed no increased embarrassment of the respiration, no lividity of countenance, or appearance of gasping for breath. In the course of a few hours he died. It may be mentioned as interesting, that during the last two days of the patient's life the amount of urine voided was greatly diminished; the density, however, remained as before, and the chemical indications of sugar equally distinct.

On the 5th January the body was examined by Dr Haldane, to whom I am indebted for the following account of the morbid appearances. The mucous membrane of the fauces and pharynx was reddened, but there was no exudation over its surface. The epiglottis was swollen, and of a red colour; the lower half of its inner surface, and the whole of the lining membrane of the larynx, was coated with a tenacious adherent false membrane of a dirty yellowish-grey colour. This membrane extended downwards to the upper part of the trachea, then it ceased abruptly; the lining membrane of the trachea being of a bright-red colour, though coated by a thin soft layer of lymph. At the lowest part of the trachea, false membrane, similar in all respects to that found in the larynx, existed, and extended into both bronchi—into the left more decidedly than into right. Traces of false membrane existed in the very small bronchial ramifications of left lung.

On microscopic examination, the false membrane was found to consist essentially of fibre and cells, but at some places there was an abundant deposit of spores and filaments of the oidium albicans. On examining the portion of membrane expectorated, the presence of the same vegetable parasite had been detected.

There was slight œdema of both lungs, but no other morbid appearance in the thoracic or abdominal organs.

As a termination of diabetes, the occurrence of croup in the case now briefly detailed appears to me of some interest; such a termination, indeed, must be regarded as extremely rare. I am not aware of its having ever been previously noticed. Comparatively few of the recorded cases of croup in the adult were examples of the disease occurring as a primary affection; in the great majority, as in the one just read, the croup was a secondary affection, coming on in the course, or immediately on the termination, of some other severe disease, by which the strength of the patient had already been greatly reduced. Only one of the eight cases recorded by Louis is entitled simple croup; but the subject of his seventh observation, a woman of thirty-two years, although exhausted by misery and imperfect nourishment, had not suffered from any other malady. In the remaining six cases of Louis, croup was a complication of typhoid fever in two; in other two, of an inflammatory affection of the gastro-intestinal mucous membrane; in one, it occurred in the last stage of phthisis; while in another, it supervened on an attack of chronic pleurisy. In a case communicated by Dr Rollo to Dr Cheyne, and the particulars of which are given by the latter in his work,[1] the patient had, previous to the attack of croup, suffered from a severe catarrh; in his youth, too, he had been more than once ill with croup. This was a gunner in the Royal Artillery. A preparation from the case is preserved in the Museum of the Royal College of Surgeons (Catalogue 1293, xxvi. B). The case recorded by Dr Gillespie, already referred to, and the one published in the *Lancet* for 1838, are two well-marked examples of primary croup in the adult. It is worthy of remark, that in both subjects pregnancy was far advanced.

With one exception (the seventh observation), the existence of a distinct false membrane in Louis' cases was not limited to the air-passages properly so called—larynx, trachea, and bronchi—as in the case of Hamilton; but the uvula, the tonsils, and pharynx—in some, the œsophagus and posterior nares, were likewise involved. To the absence of false membrane over the mucous surface of the pharynx in the exceptional instance, special attention is directed by Louis; and he remarks, that, having in the six cases previously detailed, observed that the membranous concretions are propagated from above downwards, the question suggests itself, whether the malady in this instance may possibly have had a different course; or, supposing it to have originated, as in the others, by implication first of all of the pharynx, whether the false membrane formed there may not have been detached, so as to permit its subsequent only very incomplete re-formation. M. Louis himself does not answer this question; it would therefore be presumptuous in me to do so. In 1818—that is, some years before the publication of M. Louis' cases—M. Bretonneau had read to the French Academy his original observations on Diphthérite; and in 1826, his remarkable treatise on that subject, as well as the memoir of Louis, simultaneously appeared. That some of the cases of croup in the adult recorded by the latter, as well as others which have been published by different French physicians since, partook to a considerable extent of the nature of the affection first accurately described by Bretonneau, there can, I think, be little hesitation in concluding. But in connection with this particular question, there is a point which appears to me one of very considerable importance, namely, how far is the disease which is familiar to us as croup (whether affecting the adult, or, as is so much more common, the child), and which at the hands of various English writers has received a full illustration (let me instance Home and Cheyne among the older, and Drs West and Charles Wilson among recent authors), to be regarded as identical with the croup described by French physicians. I am surely not mistaken when I state, that the very circumstance of the implication of the pharynx to any considerable extent—especially if it become distinctly the seat of the adventitious deposit, still more if it be the earliest part affected by it—in the opinion of English physicians generally, would lead to the conclusion that the case is one of diphtherite, and not of our true English croup. I remember, as I have before observed in this Society, on the occasion of my first seeing cases of croup in the French hospitals, to have been struck by noticing the great care exercised in the examination of the mouth and throat of the child; and when instances of the disease were described by Trousseau or by Guersant, I failed to recognise the distinguishing features of the disease as familiar to me in the writings of British physicians. Croup, as the distinguished physicians now named taught us, was a disease commencing in the pharynx. This is indeed the doctrine of the French school; let me refer to what M. Trousseau has stated in his recently published work, *Clinique Médicale de L'Hotel-Dieu de Paris.*[1] You will hear it remarked by men of undoubted experience, that they have often seen children die of croup in whom the pharynx has not been involved. Before M. Bretonneau had read, in 1818, to the Academy his earliest observations on Diphthérite, before the publication in 1826 of his treatise, the fact was generally admitted, that membranous croup commenced in the larynx. M. Bretonneau has caused a revolution in science by maintaining and demonstrating that almost always, at least nineteen times out of twenty, it was not so, but that the malady commenced in the pharynx. Guersant, his friend, and for a lengthened period physician to the Children's Hospital, after having supported the former opinion, when his attention was directed to the point, adopted the view of Bretonneau. Trousseau then goes on to observe, that, as regards himself, having perhaps seen more of croup than any other physician of the capital, from the circumstance of his connection during eighteen years with the

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[1] *Loco citato*, p. 115.

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[1] P. 327. Angine Diphthérique et Croup.

Children's Hospital, and from having been very frequently consulted in regard to the operation of tracheotomy in the treatment of diphthérite—"I assure you," he says, "that the proposition announced by my venerated master is the true one, and that in most cases the croup begins in the pharynx." "I do not deny," he observes, a little further on, "that croup may first affect the larynx, any more than I hesitate to admit that in very rare circumstances it may have its first seat in the bronchial ramifications. Croup commencing in the larynx is a rare and exceptional fact." The maintenance of a different opinion Trousseau explains on the ground, firstly, of the insufficient attention which has been paid to the examination of the mouth and pharynx; and, secondly, because, in most instances, the early symptoms of the malady are comparatively trivial, and, before the larynx and trachea have become involved, the distinct traces of the pharyngeal affection have passed away.[1]

I turn now, very briefly, to notice the statements of two of the most accurate observers in our own country. "The cavity of the mouth and the fauces do not present," remarks Dr West, "any invariable alteration in cases of croup. Congestion about the fauces and soft palate is of frequent occurrence, sometimes coupled with a scanty deposit of false membrane in those situations, or the tonsils are found in a state of ulceration."[1] Dr Wilson, who perhaps of all English writers on croup has treated most fully of the condition of the pharynx, tonsils, and palate in the early stage of the disease, and speaks of the fauces being always affected "to an extent which indeed varied considerably, but which was in every instance sufficiently obvious, and always characteristic,"—having described the red and congested appearance of the parts,—observes, "Along with this, though only in a small minority of instances, there may be observed traces of exudation on the amygdalæ or pharynx."[2]

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[1] Croup occurring in the adult runs, in the opinion of Trousseau, a similar course. The derangement of health and febrile disturbance are at first very slight, the pain in the throat trivial, and the existence of false membrane in the pharynx may be found in patients whose only complaint is that of a little difficulty in swallowing. Here, however, the danger is greater than in the child. The adult having the opening of the larynx proportionally larger than in the latter, the calibre of the trachea being also greater, the air finds a sufficient passage even after the deposition of false membrane on its walls has commenced; and when the symptoms of croup become confirmed, the false membrane has already occupied, to a great extent, the bronchial ramifications.

These phenomena, says Trousseau, have for a long time attracted my notice. I first observed them in the epidemic of Sologne, where I was sent with Dr Ramon in 1828 to study the disease.

Let me give, very much in Trousseau's own words, the following case of croup in the adult, which he has most graphically recorded :—"I was one day—it was a day too memorable for me ever to forget it—dining with M. de Bethune, whose château is situated at a little distance from Selles, in the department of Cher, when a peasant came for me in a great hurry to see his wife, who he said was suffocating. I went immediately to the patient. I found a woman of 26 years, still attired in her holiday garb—it was Whitsunday. She had attended morning mass, at about a quarter of a league distant; after walking home, she had dined as usual, and was again prepared to go to vespers when she was suddenly seized with a sense of suffocation, so violent that her husband feared it might overpower her before we arrived. The unfortunate woman was indeed expiring when I saw her. Examining immediately the throat, I discovered a dense false membrane stretching across the pharynx. The nature of the malady was thus sufficiently shown; and the poor woman being at her last extremity, tracheotomy alone appeared able to avert immediate death. Without any delay, I forthwith had recourse to it, with no assistance but that of the husband, and with no other instrument but a knife with convex blade, which fortunately I had with me. I was compelled, moreover, for want of a proper tracheal canula, to make a clumsy one out of a leaden ball, which I flattened with a hammer, and fashioned like a tube. Unfortunately, the false membrane had already penetrated into the smaller bronchi, and on the following day my patient died."

Like the French physicians, and Dr Wilson in our own country, I feel inclined to insist upon the importance of making, whenever possible, a careful examination of the mouth and pharynx in every case where the suspicion of croup may be reasonably entertained; but, from the remarks now made, I think it must be obvious that, in the experience of physicians in France, the pharynx is more seriously, if it be not more frequently, involved in croup than is the case in Great Britain.

In bringing this case under the notice of the Society, I have not thought it necessary to refer in any special manner to the treatment which was pursued during the eight and forty hours the patient survived the attack of his fatal disease. The croup found him greatly exhausted from the long continuance of another grave disorder, and seemed to tell more distinctly by causing further depression of the system generally, than by determining that great difficulty of breathing, which, in other circumstances, is so distinctive a feature of its invasion. Laryngeal dyspnœa there was undoubtedly, and truly croupal in character; but it was modified in degree, and, in particular, not characterized by the occurrence of those sudden spasmodic attacks or exacerbations of dyspnœa (the accès of French writers) which so frequently, in ordinary croup, prove the immediate cause of death. As the patient had spat up some portion of false membrane before I saw him on the 2d January, I considered it advisable to aid the further expectoration of such by the employment of small doses of ipecacuanha. This was not long persevered with; for the tendency to sinking clearly showed that the only safe plan to be pursued was as long as possible to maintain by stimulants the patient's fast ebbing strength. Tracheotomy in such circumstances was surely altogether inadmissible; but, at the same time, I should have derived little profit from the study of the able and complete observations of Mr Spence on that subject, so familiar to the members of this Society,[3] had I not on the one hand carefully and anxiously considered whether this operation could reasonably be expected to effect any good, or, having so considered, hesitated to decide that it could not. The presence of the vegetable parasite, the oidium albicans, in the exudation matter, is not without interest; and perhaps there are some who from the fact of its existence may feel disposed to regard the case as one more closely allied to diphtheria. Such is not the opinion I entertain. With the development of that disease the production of a vegetable parasite has, I believe, no intimate connection; it is not an epiphitic disease, and in many circumstances we meet with the oidium albicans, and kindred vegetable parasites, when the mucous surfaces of various parts of the body are the seat of inflammatory action. It is certainly more nearly allied with the Muguet of French writers, the aphthous disorders of children, and ailments of like nature; but I see no reason why its presence may not at times be determined in the exudation of true croup. Possibly the morbid condition of the system previously in existence—I mean the glucogenic—may have had some influence in its generation.

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[1] *Diseases of Infancy and Childhood*, p. 358.

[2] *Edinburgh Medical Journal*, 1855–56.

[3] *Edinburgh Medical Journal*, February 1860.

## ARTICLE IV.—*Case of Puerperal Epileptic Convulsions.* By WM. COOK LOW, M.D., L.R.C.S. Edin., Deputy Medical Officer, Brentford Union Workhouse.

AT eight o'clock, on the morning of Sunday the 18th Dec. 1859, I was called to Eliza Prickett, aged 20, an inmate of the Brentford Union Workhouse, whom I knew to be in the last month of pregnancy.

I found the patient in strong epileptic convulsions, every feature of the face distorted, and the muscular system in such a state of active spasmodic action, as to require the united strength of three attendants to control her during the fits. In the intervals between the fits she was quite unconscious, and lay moaning and exhausted, till the occurrence of another convulsion. Pulse hard, full, and frequent; bowels not opened; urine passing freely.

A vaginal examination proved that labour had not commenced, the os uteri being quite undilated, and the passages dry. I was informed that she had been in this state since 6.30 A.M. of the same morning, the paroxysms immediately succeeding one another. In consultation with Dr Mackinlay, the medical officer of the workhouse, for whom I was attending, it was agreed that she should be bled, and have a strong enema thrown up. She was accordingly bled to the extent of ʒxx., and an injection, composed of Ol. Ricini ℥i., Sp. Terebinth ʒi., Mist. Cathart. q. s., was administered. The bleeding reduced the force of the pulse considerably, but did not in the least abate the epileptic symptoms. The enema was retained, and, in consequence, another was injected, which had the desired effect of freely opening the bowels. The matter which came away was black in colour, and most offensive.

2 P.M.—The epileptic convulsions occurring as before, and quite unabated in strength. From their continuance, the tongue is much injured from compression between the teeth, and is protruded from the mouth, bleeding, and swollen. Fæces and urine passing freely and unconsciously. Ordered blistering fluid to nape of neck. Os uteri still undilated.

5 P.M.—Symptoms unabated; if anything, the convulsive attacks are more frequent and stronger.

The blistering fluid not having produced its desired effect, a large blister was applied to the same spot.

8.30 P.M.—The convulsions have now continued for 14 hours consecutively, with very short intervals. Labour has at length commenced, the os uteri being dilated to the size of half a crown, the membranes ruptured, and a foot presenting. Dr Mackinlay, with whom I again visited the case at this hour, agreed with me that the patient should be at once delivered. He accordingly proceeded to further dilate the os, and, after one hour and a half of considerable exertion, owing to the peculiar manner in which the limbs of the child were doubled on its body, brought away a dead fœtus of about eight and a half months' gestation. No difficulty was experienced with the placenta, and there was no after hæmorrhage. It was our hope that the convulsions would cease immediately, or soon after delivery; but these expectations were disappointed, for at 11, when she was left for the night, they were as strong and frequent as ever.

It having been quite impossible to get any nourishment into the patient during the whole day, the pulse is now very weak in the intervals between the fits.

*Monday*, 19*th Dec.*—8 A.M.—The report is, that the convulsions continued all night, and I find them this morning to present the same characters as last evening. The blister has not risen. Bowels and kidneys performing their functions freely; pulse weak and flickering. From the state of the tongue, it is impossible to get anything down the throat.

Head to be shaved, and a large blister applied to the scalp.

8 P.M.—Since 3 P.M. there have been no convulsions, but the patient lies moaning and quite unconscious, with the blackened and injured tongue protruding from the lips, firmly fixed between the teeth, which are imbedded in its substance. She breathes entirely through the nostrils. Pulse small, weak, and above 100.

*Tuesday*, 20*th*.—8 A.M.—The nurse reports that the girl remained in the same condition as seen by me last evening, until 2 A.M. this morning, since which time the convulsive attacks have recurred as strong and frequently as ever; one of them which I witnessed during my visit resembled in every respect those of Sunday, the first day of the attack. Blister on scalp rose well; pulse still weaker, which is to be expected, as no nourishment has been taken since the commencement of the illness. Ordered enema of beef-tea, which, however, came away again almost immediately.

8 P.M.—Since four o'clock this afternoon has had no fits; is more conscious, and able to draw in wine and beef-tea in small quantities from a spoon. The excretions passed freely, and lochia established. Pulse stronger.

Wine and beef-tea to be administered during the night in small quantities, frequently.

*Wednesday*, 21*st*.—8 A.M.—In much the same condition as when last seen. Same treatment to be continued.

8 P.M.—Much better. When roused, she is able to understand what is said to her, as she shows her tongue as well as she can in the present condition of that organ. Pulse stronger; has taken ℥vi. of wine and a pint of strong beef-tea in the course of the day. The patient continued to improve all Thursday, being free from convulsions and still taking her wine and beef-tea—the former reduced in quantity to ℥iv. daily, mixed with the latter. The tongue, which is nearly cut through by the teeth, to be kept soft by applying lard. Bowels not quite so open; urine passing freely; pulse natural.

*Friday*, 23*d*.—The attendants report that a succession of strong convulsive fits again occurred during the night, but at longer intervals than the former ones. They continued, with gradually increasing intervals, during the day, and finally ceased at about 2 P.M. At 3 P.M., when I saw her, she appeared in much the same condition as during Thursday. Ordered a purgative enema, and the tongue to be sponged occasionally with the following lotion:—

℞ Sodae. Chl. ʒi.
Tr. Cinchonae. ʒi.
Aq. Font. ℥iv.

*January* 1*st*, 1860.—Since the last report, the patient has been gradually recovering. No more fits have occurred, and the tongue has regained its natural appearance. For some days the intellect was clouded, but now is quite restored, and she, in every respect, resembles any other woman recovering from confinement. She remembers nothing of her delivery. Her friends say that she never had an epileptic fit previous to the present attack.

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## ARTICLE V.—*A Case of Encephalocele; with the Theory of its Growth*. By J. MATTHEWS DUNCAN, M.D., Lecturer on Midwifery and Diseases of Women and Children.

THE subject of the following notice was born in the Canongate in the end of October; my pupil, Mr Duncan Reid, having charge of the confinement. It was a fine female, the fourth born of its mother, who is a healthy young woman, and whose other children were all born in a healthy natural state. The labour was easy; the head presenting.

At the occipital region of this child's head a large tumour was attached, which will be presently described. In other respects the head appeared to be quite normal. It was of the ordinary dimensions.

The tumour was attached to the region of the occipital protuberance by a pedicle, which may be said to have had no length, but to be fully an inch in thickness. It was globular, of about the same size as the child's cranium, and in close connection with it by means of the pedicle. It was pulpy and elastic under the hand, and evidently contained fluid. The skin was of a dark purple hue, and had few hairs except near the pedicle. The finger, pressing on and around the pedicle, could discover no aperture in the cranium. The child unexpectedly survived 47 days. During all this time it uttered no cry or sound of any kind, and made no movement except occasional feeble flexion and extension of the limbs. It never made any attempt at sucking. Food was administered to it, and swallowed with difficulty. Sugar and water, and milk and water, and negus, were the substances occasionally given in very small quantity. The amount of food consumed by the child during its seven weeks' life cannot be exactly stated, but it was incredibly small; and, during the first week of its life, scarcely an attempt was made by its mother to give it any sustenance, as its death was hourly expected.

Three days after its birth, its limbs were blue; even its face and tongue were livid, and comparatively cold. It could scarcely be seen to breathe. On auscultation, no respiratory murmur could anywhere be distinctly heard. Resonance on percussion existed nowhere, except to a very slight degree below the angles of the scapulæ, especially on the left side, where the nearest approach to vesicular murmur presented itself. As it grew older, all these conditions gradually diminished, but full expansion of the lungs was never established. The tumour gradually increased in size till the thirty-second day, when it was at least twice as big as the cranium of the child. I now punctured it with a small trocar and canula, and drew off about 14 ounces of fluid, the tumour being reduced to about one-fourth of its previous dimensions. The fluid drawn off was of two kinds: that got from the centre of the mass, and that procured on withdrawing the canula to near the aperture in the integument. Of the former fluid there were above 12 ounces; it was brown and turbid, of specific gravity 1010, and of alkaline reaction. Nitric acid being added, threw down a dense flocculent precipitate, while boiling produced only a cloudiness. Of the latter fluid there were about 2 ounces; it was more transparent and straw-coloured, of specific gravity 1012, and of neutral reaction. Under heat and nitric acid it behaved like the former. The tapping was performed about five o'clock in the afternoon, and next morning both fluids abounded in vibriones. As the weather was cold, I am disposed to think the vibriones were in the fluid when drawn off.

Fifteen days after the tapping, the tumour was refilled, being again nearly as big as before. The child then died very quietly.

The autopsy, performed by Dr Bonthron, Mr Reid, and myself, confirmed the opinion previously entertained regarding the nature of the tumour, and revealed the following interesting facts:—The cranium contained the cerebrum entire, and apparently healthy, but no cerebellum. The crura cerebelli, or rather the whole roots of the cerebellum, passed through an aperture in the occipital bone to enter the tumour already described. This aperture scarcely transmitted the finger. It was situated just below the occipital protuberance. In the progress of the dissection of the cerebrum it was evident that the cavity of the tumour had free communication with the ventricles of the brain, for pressure on the former made the contained fluid rush into the latter. The route was evidently through the aqueduct of Sylvius and the third ventricle.

The wall of the cavity of the tumour was divided into two layers: an outer, consisting of skin and aponeurosis, lined internally by a dense membrane resembling and occupying the place of the dura mater; and an inner, consisting of brain tissue, lined on both sides by the smooth arachnoid. This latter half of the wall of the tumour was very thin at the part remotest from the cranium, and gradually increased in thickness as the aperture in the occipital bone was approached. The general thickness was little less than one-twelfth of an inch. On its interior, near the aperture in the bone, and emerging from it, were two thick masses, which soon spread out and became lost: they were evidently the crura cerebelli. The liquid contents of the tumour made it evident that the brown turbid fluid drawn off during life was derived from the interior of the sac of brain tissue; while the clearer fluid, in smaller quantity, came from the outer arachnoid space. Under the microscope, the expanded brain tissue was observed to be loaded with considerable fat drops, and the vessels to have undergone fatty degeneration.

The pathology of this case, so far as the growth of the tumour is concerned, appears evident almost at first sight. But it is more difficult to account for the original production of the hernia of the cerebellum. I shall, indeed, evade the question of the original production of it altogether, merely remarking that the nature of the hole in the occipital bone, the shape and history of the tumour, and the absence of dropsy of the lateral ventricles, exclude from among the possible causes of this encephalocele that hydrocephalus which, in many cases, is believed to lead to its production. Here we have a hernia of the cerebellum through an aperture in the occipital bone. As it grows and increases in weight, the vessels in its pedicle get compressed and the circulation obstructed. This may arise either from the pedicle tending to grow to greater dimensions than the bony aperture of transmission admits of, or from the gravitation of the tumour leading to stretching of the pedicle and compression of it against the part of the bony ring that may at any time be beneath it, supporting it. The natural result of this obstruction to the free return of blood from the cerebellum will be dropsy in its ventricle and in the arachnoid space surrounding it. There will, in fact, be produced, as in this case, internal and external chronic hydrocephalus; the internal hydrocephalus distending the fourth ventricle, while the external fills up the arachnoid cavity. The theory of its growth is, in this way, found to be analogous to that of many cases of the disease to which the name of chronic hydrocephalus is generally attached. I may add, that, had the distension of the tumour advanced much farther within or without the uterus, it would have burst, and thus illustrated, in the case of the cerebellum, an accident which, when it affects the brain generally, leads to the production of, at least, some cases of anencephalic monstrosity.

## ARTICLE VI.—*On the Mode of Elimination of the Metal Manganese when employed Medicinally.* By WM. TURNER, M.B. (Lond.), F.R.S.E., Senior Demonstrator of Anatomy, University of Edinburgh.

THE metal manganese, in the Treatises on Physiology and Physiological Chemistry, is usually enumerated amongst the incidental constituents of the animal organism; for it exists only in minute quantities in the body, and its presence has been proved in but a few of the textures, as the hair, bones, and epidermis. Amongst the animal fluids, it has been described by Berzelius as present in the gastric juice; by Weidenbusch, as a constituent of the bile; and Kramer, Millon, Deschamps, and Burin du Buisson,[1] have stoutly maintained that it forms one of the components of the globules of the blood. It has also been detected by Bley, Wurzer, and Bucholz,[2] in gall stones and urinary calculi. I have not been able to meet with any recorded observations of its presence in the urine of man; but it is stated that John and Lassaigne have obtained it from the urine of a diabetic horse, and that Sprengel and De Bibra have found it in the urine of an ox.[3] In these various solids and fluids it exists in association with iron, with which metal it is isomorphous, and in conjunction with which it is almost invariably seen in the mineral kingdom, so that it is frequently a matter of considerable difficulty to effect their perfect separation. It has been supposed that the liver is the organ by means of which this metal is eliminated from the system, and that the bile is necessarily the fluid in which its presence can be most readily detected.

Until within a comparatively recent period but scanty opportunities were afforded of investigating the channel through which the excretion of the metal took place, as its compounds were rarely employed as medicinal agents. A few years ago, however, various practitioners, both in this country and on the Continent, recommended and employed different combinations of this metal, either alone or in conjunction with iron, in the treatment of chlorosis, anæmia, and other allied disorders, on the supposition that the poverty of the blood was due, not merely to a deficiency in the iron of the blood globules, but of the manganese also. The compound of permanganic acid with potash was about the same time brought before the notice of the profession as a remedy in the treatment of diabetes, on the supposition that its oxidizing properties might assist in the conversion of the sugar into carbonic acid and other products of decomposition.

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[1] *Journal de Pharmacie et de Chimie.* P. 422. 1854. Vol. 26.
[2] *Lehmann's Physiological Chemistry. Syd. Soc. Trans.* Vol. 1.
[3] *Journal de Pharmacie, Op. Cit.*

Owing to the general solubility of the salts of manganese, I was impressed with the idea that, in those cases in which the compounds of this metal were employed medicinally, the kidneys would be the organs through which their excretion would be effected, and that, consequently, they would be found in greater or less abundance in the urine. With a view of inquiring into this subject, I examined, some time ago, the urine of two persons to whom the permanganate of potash had been for three weeks administered for the treatment of diabetes. The urine in both cases presented the ordinary diabetic appearance, and sugar was detected in it by the usual tests. The process adopted in the examination was the same in each instance, and was as follows:—Forty ounces of urine were evaporated in a water bath, to the consistence of a thick syrup; to this aqua regia was added, and the mixture heated in a porcelain crucible, so as to burn off the organic matter; nitric acid was then added to the incinerated mass, and the mixture boiled for some time, and then filtered. The excess of acid in the filtrate was next nearly neutralized by the addition of carbonate of soda; and, on pouring into it a solution of sulphide of ammonium, a copious dark-coloured precipitate fell down. As the dark colour of this precipitate was due to the presence of sulphide of iron, which interfered with the proper application of the manganese tests, it was necessary to effect the separation of the two metals. This was done by dissolving the precipitate in hydrochloric acid, and then adding an excess of carbonate of lime in the cold, which threw down both the iron and the phosphates. The liquid was then filtered, and, to the clear solution, sulphide of ammonium added, when a flesh-coloured precipitate, indicative of the presence of manganese, fell down in considerable quantity. As this test alone was not considered sufficiently conclusive, I fused a portion of the flesh-coloured precipitate with carbonate of soda in the outer blow-pipe flame, when the green-coloured manganate of soda was produced. A second portion of the precipitate was then fused with borax in the outer flame, when the amethyst red colour, so characteristic of the presence of manganese compounds, was formed

From these experiments there can be no question that manganese is eliminated from the system by the kidneys, and that, too, very freely; for the precipitate of sulphide of manganese obtained from the two pints of urine taken from each of the two patients examined, was a very copious one. It is difficult to say with certainty what the exact state of combination of the manganese was in the urine in these cases, although it is extremely probable that it existed in it either as chloride or sulphate, or perhaps as both,—the compound of the metal with chlorine, and of its oxide with sulphuric acid, being amongst the most soluble of the salts of manganese. Now, chlorine and sulphuric acid exist normally in the urine in considerable quantity; and, as has been pointed out by Lehmann, the proportion of the latter is always greatly increased when a strictly animal diet is employed, such as was very much the nature of the food in the instances before us. As both patients had been for three weeks under the influence of the manganese salt before the examination of the urine was made, sufficient time had necessarily elapsed to allow of the thorough impregnation of the system with the metal, which will readily account for the existence of the manganese in such quantity in the urine.

These observations do not preclude the possibility of a partial elimination of the metal at the liver taking place, as has been generally stated; but the evidence upon which such a statement has been founded is neither very clear nor very extended, for it appears to have been based more upon a supposed analogy between the mode of excretion of manganese and such metals as arsenic, antimony, copper, and lead, than upon a direct experimental inquiry.

## ARTICLE VII.—*Quarterly Report of Cases occurring at the Edinburgh Eye Infirmary*, 140, *George Street.* By BENJAMIN BELL, Esq., F.R.C.S.E., and PATRICK HERON WATSON, Esq., M.D., F.R.C.S.E.

*October* 1*st to December* 31*st*, 1860.

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|---|---|
| Tumours of Eyelids, | 4 |
| Wounds, Inflammation, Abscess of Do., | 3 |
| Nævus of Do., | 1 |
| Hordeolum, | 4 |
| Ophthalmia Tarsi, etc., | 19 |
| Trichiasis, | 1 |
| Epiphora, | 9 |
| Do. from Everted Punctum, | 2 |
| Inflammation of Lachrymal Sac, Fistula, etc., | 8 |
| Strabismus, | 3 |
| Protrusion of Eyeball (Anæmic), | 1 |
| Wounds of Conjunctiva, Foreign Bodies under Lids, | 2 |
| Pterygium, Fatty Tumour of Conjunctiva, etc., | 1 |
| Carry forward, | 58 |

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|---|---|
| Brought forward, | 58 |
| Inflammation of Conjunctiva, Acute, | 19 |
| Do. do., Chronic, | 14 |
| Do. do., New-born Infants, | 3 |
| Do. do., Muco-purulent, | 1 |
| Do. do., Phlyctenular and Pustular, | 15 |
| Do. do., Strumous, | 6 |
| Granular Conjunctiva of Palpebræ, | 3 |
| Conical Cornea, | 1 |
| Wounds of Cornea, "Fires," etc., | 10 |
| Inflammatory Affections of Cornea, | 14 |
| Ulcers, Vascular Speck of Cornea, | 13 |
| Opacities of Cornea, | 7 |
| Staphyloma, | 2 |
| Inflammation of Iris, | 3 |
| Do. Do., Syphilitic, | 1 |
| Tremulous Iris, | 1 |
| Cataract, Idiopathic, | 3 |
| Do., Traumatic, | 1 |
| Presbyopia, | 1 |
| Asthenopia, | 4 |
| Hemeralopia, or Night-blindness, | 3 |
| Amaurosis, Glaucoma, Retinitis, etc., | 9 |
| Cases not Classified, | 9 |
| | 202 |

# Part Second.

## REVIEWS.

*On Diseases Peculiar to Women, including Displacements of the Uterus.* By HUGH L. HODGE, M.D., Professor of Obstetrics and Diseases of Women and Children in the University of Pennsylvania.

PROFESSOR MEIGS, of Philadelphia, to whom our author dedicates his work, has said of him, in a dedicatory letter introductory to his own volume on the Diseases of Women,—"I look upon you as a chief representative of medicine, on this topic, in the United States;" and calls upon him, in the name of the profession, to "make a sign for us" before he "goes out of the world." Dr Hodge, "at the request of many of his pupils" (the usual phrase), has prepared a sign, and claims a hearing for it on the ground of his having had forty years' experience in the treatment of the diseases forming the subject-matter of his work. It is a handsome volume of about 450 pages. We can truly say of it that it is a valuable and interesting treatise, evidently the result of much thought, and bearing in every line evidence that its author has never studied the subject much except at the bedside; that he is, in fact, one of a loquacious class sometimes designated on this side of the Atlantic, "your purely practical men." Cordially recommending only our obstetric brethren to read the book, and admitting its value from the point of view just indicated, we have no hesitation in adding that it will not increase the author's good fame in this quarter of the globe. It is full of questionable English, contains some very bad Latinity, and is written with an almost complete disregard for accepted medical phraseology, and in a style more adapted for talking to ignorant friends at the bedside than to educated physicians, who know that science cannot exist for a moment independently of a set of terms to whose known and admitted meanings all pay respect.

The advanced (!) pathology which pervades the book may be guessed at from one or two samples. Speaking of ovarian dropsy, he says:—

> "If the tumours of the ovaries be large, so as to rise into the cavity of the abdomen, they are generally innoxious, for then, like the uterus after the fourth month of gestation, they are supported by the brim of the pelvis; so that no pressure is made on the delicate organs and nerves of the pelvis, and the tumours themselves are found seldom inflamed or sensitive.
>
> "In such cases it has been my practice for very many years, and there has been no cause for regret, to attend to the general health and strength of the patient, and to abandon all local treatment. If possible, let the patient forget the existence of the tumours, and she will usually enjoy that portion of health and activity which belongs to her age and sex.
>
> "The attempts to resolve such tumours, experience proves to be generally vain; and to extirpate them by the operation of gastrotomy is greatly to endanger life, for a disease which very rarely terminates fatally, and even then from accidental complications, which of course do not invalidate the general principle or the practical deduction."

Take another specimen of the pathology taught in 1860 by a professor of obstetrics. He says:—

> "By way of illustrating this idea, attention might be fixed for a moment on puerperal convulsions, which are always dangerous and too frequently fatal. After much anxious experience and reflection, it is evident to my mind that there is no essential pathological difference between the usual form of puerperal convulsions and those which occur in the non-parturient state in hysterical women. I have seen so many cases in the latter precisely similar, as regards their phenomena at the time and after the attack, to those of the former; and so many of the puerperal form resembling those of the hysteric as to the precursory, attendant, and consecutive symptoms, that I must believe, that pathologically they are virtually the same. The only real difference is the degree of congestion; this being comparatively trifling in the unimpregnated state, very great during gestation, and still more so during labour. The engorgement, in this case, arises from the almost universal plethoric state of pregnant women, which during labour is enhanced, particularly as regards the brain, by the 'pains' and the bearing-down efforts; these include, of course, the holding of the breath, the temporary suspension of respiration, and the consequent passive congestion in the lungs, right side of the heart, the brain, etc. Hence the danger and fatality of puerperal convulsions. The original nervous irritation is aggravated by this congestion, so that effusion of serum or blood may ensue, and the patient become comatose, and die."

Other examples of grave deficiencies might easily be cited, were any object to be served. We shall merely further call attention to the woodcuts, which are, not without truth, announced as "original." Cuts are very important, on account of the peculiar fixedness of the impressions they produce. In our author's work they are original and abominable, not only disregarding all the labours of Kohlrausch and of Legendre, but even schoolboy accuracy. The attempt to give the small intestines is laughable; the proportions of parts are all bad; and the figure (p. 258) of a prolapsed uterus is not only not according to Huguier and nature, but according to Hodge alone.

The perusal of this work impresses us with the belief that its author is an honest and, on the whole, a good practitioner, in a class of cases which have been, and are, the chosen field of physicians that cannot be so favourably characterized. Various notices in this book show us that the metropolitan towns of Europe are not alone in their possession of fashionable ladies' doctors, with their disgusting and lucrative trades. "A few years ago (says Dr Hodge) uterine diseases were treated as spinal irritation, with the tartar emetic ointments, applied from occiput to coccyx; in the practice of the present day, the application of nitrate of silver to the os uteri is equally universal."

> "A lady of education and refinement travelled, at the seventh month of utero-gestation, some 300 miles to Philadelphia, in a state of great mental excitement; because her physician had declared that she had an ulcer of the uterus. None could be detected; the tissues were normal; and she immediately returned home relieved of her imaginary destructive disease, her mind and heart rejoicing with pleasing anticipations for the future.
>
> "In another instance, a fine healthy young lady, the mother of several children, and who was then nursing a fat lovely child of six months of age, presented herself to me from a distant State, complaining of pain, a sensation of dragging and weakness, an inability to walk, etc. She had been for some three years, even while pregnant, treated by caustics for ulceration of the cervix. By examination with the speculum, a slight redness was observed at and near the os uteri; *that*, said her husband, who had been accustomed to assist her physician in his examinations, is the ulcer, exactly as it has always appeared. I found the uterus was, however, completely retroverted. By relieving this displacement, and using some astringent wash, in a few weeks my patient was free from uncomfortable feelings, could walk at pleasure, and felt perfectly well, to the astonishment of her husband and friends.
>
> "Under similar circumstances, a like result has been obtained in innumerable cases."

But although we esteem the candour and are gratified with the open garrulity of Hodge, we cannot acquit him of vain attempts at prematurely systematizing uterine diseases, and of riding this as a hobby-horse, while the press is teeming with large and small contributions to the true science of gynækology, over which his charger passes, either disdainful or ignorant of the unassuming crowd of true labourers around him. He classifies the diseases peculiar to women under three heads:—Diseases of Irritation, Diseases of Sedation, and Displacements of the Uterus. All the uterine diseases, commonly described at length as distinct and prominently characterized entities, receive from our author subordinate places as complications or secondary and sympathetic results of irritation, displacement, or sedation :—

> "One great object of the present work is to maintain that, in many cases, the independence of nervous diseases is complete; and also that, when complications exist demanding therapeutical assistance, the neurotic affection is often of primary and essential importance, and demands the chief attention of the practitioner."

Irritation is the great neurotic affection of the womb, and its pathology is as follows :—

> "An irritable uterus is that state of the nerves of the organ in which they are preternaturally susceptible to impressions. This is all. There may be, and often is, no perceptible disturbance of the organic life. It is merely a disease of the animal life; often, however, when a severe or continued irritant disturbs this irritability, the irritation will be followed by congestion or engorgement. This is not inflammatory congestion, but that modification of congestion resulting from nervous excitements, as in menstruation, erections, etc. This congestion may be the cause of leucorrhœa, menorrhagia, and hæmorrhagia. Sometimes, when long persistent, and especially when no secretions or effusions ensue for its relief, congestion is followed by increased growth or development of the organ, that is, by hypertrophy, but never by inflammation, by induration, ulceration, or other results of inflammatory action. Hence, there is no permanent alteration of structure; even after the lapse of many years, the recovery is perfect, and often sudden. Of course, inflammation is often coexistent with an irritable uterus; but it arises from other and extraneous sources. On the other hand, an irritable tissue often ensues from inflammation, which is thus sometimes the effect, but never the cause.
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> "This simple distinct view of an irritable organ does not seem to have been received by the profession; even Gooch, notwithstanding his admirable description of the disease, treated it as an inflammatory complaint. His successors have followed him practically, and have expressed their theoretical views by numerous modified terms. Thus we read of a moderate degree of inflammation; of sub-inflammation; of a continued dysmenorrhœa; of rheumatism or gout of the uterus; of inflammation slowly, after the lapse of years, tending to disorganization; of a peculiar irritation, not tending to recovery; of congestion of the uterus; of engorgement; and lately we hear constantly the positive, unmodified declaration, that it is nothing more than inflammation of the mucous membrane of the os, cervix, and sometimes of the body of the uterus, followed by its usual consequences. The practice, most unfortunately, of authors and theorists is founded on these different pathological views.
>
> "The numerous and varied opinions of pathologists on this subject, in Europe and America, as evinced by books, and by the excited debates in medical societies, cis- and trans-atlantic, are anything but creditable to medical science. All must mourn over a discrepancy of opinion, which bears so directly on the treatment of such painful and distressing maladies."

As there is to every thesis an antithesis, so irritation has its opposite, sedation. This is so purely a theoretical or subjective affair, that we shall not venture to tamper with the author's original ideas on the subject :—

> "Perhaps (he says) the design of this work will not be fully accomplished without noticing the state of a part or of the whole system, directly opposed to excitement or irritation. Inertia or sedation may exist: as irritation is an increase of the vital phenomena or actions of a part or of the whole, sedation is a decrease of those phenomena. In a moderate or normal state, we may say, it is inertia, or torpidity; in a more severe or morbid state, it is sedation. As irrita-

tion is the result of an irritant acting on the irritability of a part, so sedation is the result of a sedative acting on the same irritability. It is a depression of the organic or animal actions, or of both. The torpor of the extremities, of the surface, or of the whole body, from exposure to cold, is a very pure and common example of both organic and nervous sedation; as well as the pallor and coldness of the feet and hands, so frequent in nervous people, who, with great irritation, it may be, of the brain, have sedation in the extremities.

"Sedation does not necessarily imply a loss of power or debility, with which it is too often confounded. Vital power is the capability of resisting injurious influences, or of enduring action. Debility is the diminution of power, sedation a diminution of action. The reaction which follows the exposure to cold air or water manifests an abundance of vital power, often, indeed, an increase of power. Hence sedation is generally very transitory, rapidly appearing and disappearing, alternating speedily with states of irritation. In excitable temperaments, there is such a sense frequently of depression and exhaustion, that patients and even their friends are terrified by the so-called "weakness" of the sufferer; but in a few minutes, perhaps, all these sensations vanish, and the ordinary manifestations of activity and power are observed. Reaction may rapidly ensue, although not unfrequently it occurs more slowly, but still without any real diminution of strength. Of course, sedation may and often does coexist with debility. Hence, in very weak persons sedation is more serious, and may be followed by prostration or collapse; that is, by a loss of power as well as by a loss of action. This is a sinking or dying condition, or, as regards a portion of the tissues, it is a gangrenous state. The proper designation is a loss of power or of strength, in which sedation is a consequence; but generally sedation implies merely a diminution of action without loss of vital tone or vigour."

Our author goes on to describe organic and nervous sedation, sedation from moral and sedation from physical causes, in a series of chapters, which we cannot attempt to analyse.

In his chapters on Displacements, the author labours to extend the pathological influence of these conditions beyond the scope allowed to them by his predecessors. Writing and discussion on this subject is almost necessarily very vague and very lengthy. The opinion of a highly esteemed physician like Dr Hodge, when simply stated, carries more weight than when accompanied by all the quasi-learned discussion with which he overwhelms it. We shall only say that the displacement-theory of uterine diseases is certainly not increasing in favour in this continent. But Dr Hodge does not merely theorize, he proposes active treatment. Intra-uterine pessaries he rejects as too dangerous to be judiciously used. He proposes an innocent new lever pessary, open or closed, and curved in a variety of ways. To attain success in using these new pessaries, the practitioner is advised never to despair, but change the shape and position of the instrument, and continue treating assiduously. Of Dr Hodge's pessaries we shall not venture to give any decided opinion at present. We shall try them, or wait till we hear the results of their continued use. But we shall not be disappointed if we never hear of them again, for we do not expect to do so.

1. *Traité Pratique des Maladies Vénériennes: ou Recherches, Critiques et Expérimentales, sur l'Inoculation appliquée à l'Etude de ces Maladies.* Par PHILIPPE RICORD, M.D. Paris, 1838.
2. *Traité de la Maladie Vénérienne.* Par J. HUNTER. Traduit par le Docteur G. RICHELOT, avec des notes et des additions par le Docteur RICORD, Chirurgien de l'Hôpital des Vénériens de Paris. 3e Edition. Paris, 1859.
3. *Lettres sur la Syphilis, adressées a M. le Redacteur en chef de l'Union Médicale.* Par PH. RICORD, etc. Paris, 1851.
4. *Leçons sur le Chancre, professées* par le Docteur RICORD. Redigées et publiées par ALFRED FOURNIER. Paris, 1858.
5. *Exposition, Critique et Pratique, des Nouvelles Doctrines sur la Syphilis.* Par M. P. DIDAY. Paris, 1858.
6. *Annuaire de la Syphilis et des Maladies de la Peau.* Par P. DIDAY et J. ROLLET. Lyon, 1859.
7. *A Practical Treatise on Diseases of the Urinary and Generative System.* By WILLIAM ACTON. London, 1860.
8. *The Modern Treatment of Syphilitic Diseases, both Primary and Secondary.* By LANGSTON PARKER, F.R.C.S. London, 1860.
9. *The Pathology and Treatment of Venereal Diseases, comprising the most recent Doctrines on the Subject.* By JOHN HARRISON, F.R.C.S. London, 1860.
10. *A System of Surgery, Theoretical and Practical.* Edited by T. HOLMES, M.A. Cantab. Vol. I. Article "Syphilis," by H. LEE, Esq. London, 1860.

(*Continued from page* 650.)

THE specific venereal diseases which we have now to consider have very commonly been included under the name of Syphilis. This name has been derived by Fracastor, in his very elegant poem upon this somewhat inelegant subject, from a fictitious hero, Syphilus, who, in an evil hour, having insulted Apollo, brought upon the human race this malady as a fearful penalty for his temerity.[1] A more rational derivation of the word, from either *συν-φιλια*, mutual love, or *συς-φιλια*, piggish or impure love, naturally suggests itself, and obviously indicates that the term must originally have been designed to include all diseases which we now style venereal, that is to say, resulting from impure sexual intercourse.

Those of them, however, to a consideration of which we devoted the first part of this review, had, as we then saw, no specific definite origin, and no specific results. Although they were communicable, they were so simply because they afforded irritating secretions. But those which remain to be considered have undoubtedly a specific origin and a specific transmission. The term syphilitic has, therefore, in the language of modern pathology, been reserved for those venereal diseases which follow this undoubted specific course. But a still more rigid inquiry into the specifically communicable and the consecutive affections has separated them into primary affections or sores, which are commonly called chancres, and a constitutional infection to which the term syphilis is usually restricted.

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[1] "*Syphilidemque ab eo, labem dixêre coloni.*"

This constitutional disease called syphilis, as we now-a-days meet with it, is in every case dependent upon the action upon the tissues of the body of a specific morbid poison, which Ricord first designated without any definite significance, "*The Syphilitic Virus*."

There was a time, however, not far distant, when many esteemed pathologists would not have patiently listened to the employment of the word virus to describe the evolution of syphilis. To such days belongs the tragic indignation of the learned and eloquent Jourdain, who, in repelling the arguments of Ricord in support of this doctrine, insisted, in the Academy of Surgery, that, call it what he would, he should not degrade the term virus by applying it to such a disease.

But while the onward wave of pathological knowledge has, to our mind, left the statement of Ricord established upon a basis more firm and sure than ever, and swept away all arguments and facts which seemed insuperably to oppose it, still, if our readers will bear with us for a moment while we compare the rigid signification of the term, "virus," with the condition of the pathology of syphilis at the period to which we have just alluded, we think it will become apparent that Ricord asked too much when he insisted upon the recognition of a syphilitic virus as a logical deduction from the facts as then observed.

A specific virus, in strict pathological language, is a something which of its own virtue, when introduced into the tissues of the body, infects the whole organism, and is reproduced at the part into which it was introduced in the form of purulent matter, the product of the specific inflammation, and which is capable of reproducing itself under similar circumstances *ad infinitum*.

Those who regarded gonorrhœa, warts, etc., as evolutions of a protean disease, which they called syphilis, and which they believed originated in the great common venereal virus, could not be expected, of course, to see in them anything so constant as to enable them rationally to include them in the limits of such a rigid formulary as we have just enunciated.

But, rejecting all the simple results of local irritation from the category of specific affections, for reasons for which we think we have already shown sufficient cause in the former part of this article, we would now attempt to face the question, Are all the inoculable affections of the genital organs really syphilitic? In other words, and more plainly, Is every sore upon the genital organs, which furnishes an inoculable pus, a source of the syphilitic virus? For, observe, such was the doctrine of Ricord, as enunciated 30 years ago; such was the pathological truth which he had led captive to the point of his lancet; such was what he believed he had proved, but of which Jourdain so indignantly repudiated the demonstration.

To arrive at any conclusion upon this subject, we must consider the data from which he made this large generalization; and, without entering minutely into the very experiments and observations upon which the conclusions were based, we will consider the subject in the following order:—1*st.* The Source of the Virus, and its Condition. 2*d.* The Part and Person into whom it is introduced. 3*d.* The Effects it produces in the part. 4*th.* The Effects which follow in the system. And, to avoid confusion, and preserve an historical sequence, we shall examine these particulars only by the light afforded by the clinical observations of Ricord up to the year 1834.

(1*st.*) *The Source of the Virus.*

We have already had occasion to see how the purulent matter derived from gonorrhœa cannot produce chancres when applied to a solution of continuity of the surface; and, conversely, that whenever the matter from an unexplored mucous surface, such as the urethra or vagina, produces a chancre by inoculation, we may rest confident that a chancre exists somewhere upon that surface. While, then, a chancre is the only possible source of a purulent secretion capable of giving rise to a chancre upon inoculation, if we take inoculation as an absolute test of specificity, and find that the pus of a chancre will not under all circumstances produce positive results, it follows that there are circumstances which prevent a chancre which was inoculable one day from furnishing an inoculable secretion the next. What, then, are these circumstances? Can we, for example, from the appearance of the purulent secretion, decide as to what the result will be? In reply to this, some surgeons have attempted to indicate certain characters which they believe distinguish the specific pus. Such characters, however, belong to the pus, and not to that which constitutes the essential potency of the pus, and which apparently eludes our best efforts to characterize its presence. We know, however, that it is absent when putrefaction has commenced, or when cicatrization of the sore is in progress. But the chancre poison, when potent, can be preserved in an active condition for any length of time, just as we preserve vaccine lymph, and therefore needs no physiological act upon the part of the organism which furnishes the secretion to make it effectual. The constant source, then, of the chancrous poison is a chancre yielding pus—the sore not cicatrizing, the pus not putrescent.

(2*d.*) The Part and Person into whom the Chancrous Poison is introduced.—Have they any effect upon the action of the poison? Ricord, in reply, showed that, if the poison from a chancre fulfilled the indications we have already stated, its introduction into any part or any individual, provided only there be a slight solution of continuity of the shielding cuticle, specific effects will ensue.

(3*d.*) These effects are,—1*st*, A pustule, which forms a sore; or, 2*d*, An open sore. In either case, the characteristic of the sore being, its tendency to extend its limits, or to be tardy in cicatrizing. But this sore, so produced, Has it the characters of the parent sore? Now, in 1834, and even at a very much later period, the only reply which could be given to this was, that the sore might present various aspects. These differences, it was presumed, depended, not upon the poison, but upon the state of the constitution of the individual who had been inoculated with the chancrous matter; and it was further remarked, that these different appearances seemed to bear some unknown relation to certain after effects.

(4*th.*) These effects which follow, the experience of all ages has shown to be more various in appearance than even the sores themselves. In some cases, for instance, the sore is the whole affair; in others, a swelling in a neighbouring lymphatic gland makes its appearance, resists all treatment, and inevitably terminates in suppuration; in others, a glandular enlargement occurs in the neighbouring lymphatic chain, giving rise to no uneasy symptom, but remaining very persistently. In some cases no constitutional symptoms occur; in others, a mild series of cutaneous affections follow; while in others the constitutional symptoms are both severe, protracted, and intractable. Now, if all these affections are really one and the same, they certainly constitute a most incongruous medley—a confusion of results, as originating from a single cause, enough to confound any ordinary mind, and to bring order out of which were a task worthy of Hercules himself. Such was the unsatisfactory condition of the results of M. Ricord's observations at the time alluded to, when he first attempted to prove the existence of a syphilitic virus.

*One seed* (to employ his own simile)—the syphilitic virus; various plants—the different forms of sore; and still more various fruits—the uncertain consecutive results. Such was all he could adduce in proof of its existence. If this were consistent with his idea of a specific virus at that period, sure we are that it does not fulfil the requirements of the formulary we commenced by enunciating; nor, indeed, would it tally with what would be demanded by Ricord himself at the present day. The doctrine of a single virus, which produced such various, nay, dissimilar results, quite inexplicable by any known pathological laws, was only calculated to engender a sense of uncertainty in prognosis, and a want of confidence in the employment of treatment. We need not wonder, then, that practitioners, who daily studied facts as well as doctrines, should come to the conclusion, as such a doctrine failed to explain a majority of the facts which came under their observation, that it was far better to reject it altogether, and fall back upon the glorious doctrine of uncertainties on which medicine has been built from the earliest times.

What, then, had Ricord really proved when he thought that he had demonstrated the existence of a real veritable virus? Simply that, apart from gonorrhœa and non-specific affections yielding a purulent secretion, there were sores, usually called *chancres*, which afford a secretion capable of reproducing similar sores upon inoculation; and that, while some of these are followed by constitutional symptoms indicating an empoisonment of the system, others—and these are the majority—are followed by no result whatever. It is true that by many this immunity from constitutional infection was attributed to the employment of timeous treatment; while, again, by others the existence of all such symptoms was held to prove that a poisonous use of mercurials had been had recourse to, and to which, accordingly, the so-called constitutional manifestations of syphilis were referable. Ample experience, however, in the expectant plan of treatment, once in vogue both in Edinburgh and upon the Continent, has sufficed to prove to the satisfaction of the most sceptical that constitutional syphilis will and does occur in a certain number of cases where no mercury or anything else has been given; while, again, the employment of the most active treatment, whether of the sore or directed to the condition of the constitution, has not been found to diminish the proportion of cases in which constitutional syphilis follows the occurrence of chancres. It became obvious, then, to all attentive observers, that though every chancre might reproduce a chancre, every chancre was not necessarily followed by constitutional syphilis. It was clear that, while some chancres existed only as such, and produced no more than local effects, and while some irradiated their influences no further than the first lymphatic gland in the neighbouring chain, there were others which were followed, after the lapse of some weeks or months, by a series of constitutional symptoms, which invaded in turn the different systems of the body, commencing with the skin and mucous membranes, and terminating with the cellular tissue, bones, and viscera.

It was clear, then, if all chancres were to be held as alike capable of infecting the system, and if treatment could neither be accused of inducing nor depended upon for preventing the constitutional affection, that these dissimilar results, to be rationally explained, could alone be attributed to some difference in the constitution, temperament, sex, or idiosyncrasy of the individual in whom they occurred. And the lymphatic temperament, the scrofulous diathesis, and irregular habits were presumed by some to explain the constitutional evolution of the disease, much in the same way that a debilitated state of the constitution obviously favoured the occurrence of phagedenic ulceration in the chancres themselves. According to this view, the chancre poison resembled a seed which produced different plants and various fruits, according to the soil in which it was planted. In practice, such a generalization was not found to add much to the certainty of our prognosis, for while it implied that every chancre might induce syphilis, the manner how, the time when, and the reason why, such an infection should occur in one case as compared with another, was left absolutely indefinite. One thing, however, remained certain, that in the great majority of cases no constitutional symptoms were to be apprehended. We believe, then, that while M. Ricord, with any or all of these ingenious speculations, failed in his proof of the existence of a *syphilitic virus*—possessed of a specific commencement, a specific transmission, and a specific evolution in the form of an inevitable diathesis—he had proved most completely a minor proposition, viz., that in the chancre there was a specific virus capable of reproducing itself; that in the chancre, and its transmission from individual to individual, there was a distinct revolution of cause and effect alternately; while he indicated the existence of another circle beyond this, consisting of certain consecutive or constitutional effects, which, although obviously revolving around the same centre, he failed definitely to connect with those revolving within. He certainly seemed to show that there was no syphilitic infection of the system without the pre-existence of a chancre; but at the period of which we speak he certainly had failed to discover how or why some chancres were followed by syphilis while others were not.

In our own days there has, we think, been no greater advance in pathology than that which has enabled us to explain definitely this apparently insuperable anomaly; for, by means of it treatment has become more certain and less empirical, and prognosis has been rendered something approaching to absolute. With special reference to this very important subject of prognosis, we would now pass on to consider whether we possess any definite symptom or symptoms in connection with the chancre, by means of which we can say in what cases the affection will remain a mere local one, and in what cases the constitution will become involved.

In the work of Jean de Vigo we find him directing particular attention to the induration of the chancre; and Marcillus Cumanus actually compares the induration of a chancre to a wart, and speaks of the sore itself as livid in tint and implanted on a hard base. Ambrose Pari obviously attached great importance to this same symptom of induration when he says, "In an ulcer of the penis, should the part be indurated, it will be an infallible sign that the patient is affected with syphilis." Petit has remarked, that those chancres which became indurated were the most constant cause of syphilis; and, in our own country, Benjamin Bell, John Hunter, and Mr Pearson have almost made the induration of a chancre an essential character by which the chancre may be distinguished from those other ulcerative affections of the genitals which had been recognised apparently in all ages, and to which they gave the name of diseases resembling syphilis and pseudo-syphilis. I say almost; for it is obvious, from even a very superficial glance at their writings, that they did admit within the category of true chancres, other sores than those which are followed by constitutional syphilis. It is certain, however, that they had formed no distinct idea of the doctrine of a plurality of specific causes. With them all chancres were liable to be followed by syphilis, or lues venerea, as they called the constitutional affection; and it was to the preventive powers of mercury that any immunity from its dread invasion was to be attributed.

Mr Carmichael, of Dublin, in 1815, first directed attention to certain different appearances in those chancres, and to certain forms of constitutional symptoms, between which he believed there was an intimate connection; so intimate, indeed, that he considered them to be related to each other as cause and effect. He proposed, in fact, to admit of a plurality of poisons, specifying no less than four distinct and different forms of sore resulting from their action upon the tissues of the body, and each accompanied by a corresponding type of constitutional affection.

The following was his classification in accordance with this view of the subject:—

| Form of Sore. | Eruption on Skin. | Affection of Throat. | Other Affections. |
|---|---|---|---|
| 1. Simple Ulcer. | Papular. | Increased Vascularity. | Rheumatic Pains. Iritis. |
| 2. Ulcus Elevatum. | Pustular. | Dry and granular. | Distension of Joints. Nodes. |
| 3. Phagedenic Ulcer. | Russia. | Sloughing *Ulcer.* | Severe Pain in Joints. Nodes. |
| 4. Indurated Chancre. | Scaly. | Excavated *Ulcer.* | Cephalic pains, glandular enlargements. Nodes. |

But this somewhat clumsy classification and fanciful arrangement of symptoms, although it is even still adhered to in a more or less modified form by some surgeons of the Irish school, was admitted by practitioners generally not to be capable of anything like a rigid application, and was, accordingly, soon abandoned. In fact, this hypothetical multiplication of the chancre poison had been pretty well forgotten, when Ricord, in 1835, wrote as follows: "We most frequently meet with induration of the base of the chancre in those cases where secondary symptoms afterwards occur." Again, with greater precision, in 1858, we find him saying: "Indurated chancres are *usually* followed by secondary symptoms; and the fact that this induration has occurred seems to indicate that the infecting principle has already affected the economy,"—a statement which, in 1840, he completes by asserting, as the result of his experience, that "when a chancre becomes indurated, it is infallibly accompanied by an indurated and non-suppurating engorgement of the neighbouring lymphatics." In 1850–51 these views had received such constant confirmation in practice, that he does not hesitate, in his Letters upon Syphilis, communicated to the *Union Medicale*, to affirm that "when a chancre becomes indurated, there is of necessity constitutional empoisonment; this specific induration is a certain and absolute proof that the constitutional infection has already occurred." And, in another part of the same correspondence, we find him saying that "the variety of the diseased conditions following chancres depends not only upon the condition of the individual, but upon *a certain variety in the cause, and therefore in the virus*."

What, then, is the nature of the difference between the virus of the indurated chancre which is the source of syphilitic infection, and the chancre which is unattended by syphilis?

Some, among whom we presume those who deal in "Syphilization" may be supposed to range themselves, have ingeniously attempted to prop up their practice by hazarding a theory, viz., that the non-indurated or simple non-infecting chancre is to the indurated infecting chancre what cow-pox is to small-pox. But this charming analogy should, if true, imply that inoculation with the virus of the non-indurated chancre should protect the system against the indurated chancre and its constitutional sequelæ. Unfortunately, however, we do not find it so. The non-indurated chancre may apparently be reinoculated *ad infinitum*, but it proves no protection to the inoculation with the virus of the indurated chancre and its disastrous consequences.

Another view of the relation which these two forms of chancre bear to each other has been advanced by Dr Clerc. The simple non-infecting chancre, according to this gentleman, is merely a modification of the indurated or infecting chancre, resulting from the inoculation of the virus of the indurated chancre in an individual who has already suffered from an indurated chancre and constitutional syphilis. The more recent investigations of Ricord tend to overthrow this theory, and apparently indicate rather that the results of the inoculation in a virgin subject[1] of virus obtained from a chancre existing in a patient who has already suffered from syphilis, will depend entirely upon the nature of the chancre from which he derived his infection. From such, and various other analogous facts, Dr Bassereau, a pupil of Ricord's, has advanced a step further. He regards the virus of these two forms of chancre as perfectly distinct the one from the other, and each capable of transmission after its own kind. According to this view, there is no longer *one* chancre poison, with various inexplicable results, but a *duality* of virus and a duality of effect.

There is, 1*st*, the simple, *soft*, non-infecting chancre—the *chancroid*, as Dr Clerc calls it—the chancre without syphilis, as it really is; and there is, 2*d*, the *indurated*, the infecting, the Hunterian chancre, the *chancre* proper, with its *inevitable* syphilitic infection, in which we recognise what at the commencement of this review we set out in search of—the alone source of the syphilitic virus, because always constant, and tallying in every item with our formulary of a true virus.

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[1] By *virgin*, in such a collocation, the Continental syphilographers intend to designate those who have never been affected with syphilis.

To the description and diagnostic recognition of these two forms of virus—the syphilitic and the chancroid—we now turn; for upon a right comprehension of their distinctive manifestations must depend our prognosis, and the treatment to be adopted in the early stage of these similar but essentially distinct diseases.

I. THE SOFT OR SIMPLE CHANCRE.—Its essential characters may be summed up in a few words.

The margins of the sore have a sharp, definite outline, giving it the aspect of having been cut out of the tissues with a punch. The surface is irregular, as if worm-eaten, and is of an ashy hue. The base is free from any specific induration, or, at most, it is accompanied by simple inflammatory thickening. The discharge is usually copious, thin, and sanious, very irritating, containing the specific virus, and long maintaining its specific qualities. Therefore the soft chancre is rarely single, generally multiple, or, at least, rapidly multiplying itself by a series of spontaneous inoculations of contiguous parts; and, besides tending to extend its limits by the superficial invasion and destruction of surrounding parts, it is particularly liable to become affected with phagedena; and, under all circumstances, it is an excessively sensitive and painful sore.

The soft chancre produces either no effect upon the lymphatics, or, when it does affect them, the bubo may be, 1*st*, a simple sympathetic inflammatory engorgement, such as may result in the course of any inflamed wound or sore; or, 2*d*, it may be an acute monoglandular virulent affection, the result of specific absorption, which infallibly suppurates and furnishes an inoculable pus. Chancres with such characters are purely local affections; they are never followed by any constitutional infection; they irradiate their influence no further than the first gland in the neighbouring lymphatic chain.

Such being the case, we have practically, in the soft chancre, only to deal with a nasty, painful form of ulceration, which tends to extend its limits, 1*st*, by invading surrounding parts; 2*d*, by multiplying itself; 3*d*, by producing buboes; 4*th*, by becoming phagedenic; and the cause of all this local mischief is contained in the specific virus which reproduces itself in the discharge from the ulcerating surface. The whole secret, therefore, of the successful treatment of the soft chancre lies in the complete destruction of the specific ulcer, and its conversion into a common granulating sore. This we can effect most certainly and speedily by means of such cauterization as shall destroy not only the whole surface and margins of the sore, but the tissues around and underneath to a slight extent. For this purpose, the actual cautery, caustic potash, or soda, Vienna paste, chloride of zinc, nitric acid, the fluid pernitrate of mercury, the saffro-sulphuric caustic of M. Velpeau, or the carbo-sulphuric caustic of M. Ricord, will succeed equally well, if only they are thoroughly applied; while nitrate of silver, sulphate of copper, sulphate of zinc, and other favourite applications, can only act in a very modified degree as caustics, and are therefore not to be depended upon as means for summarily destroying the virulence of the sore. Where, however, the patient objects to the employment of powerful caustics, then solutions of these salts, suited in strength to the irritability of the part and person in which they are to be employed, will be found well adapted to act as alteratives in checking the copious irritating secretion from the sores, in limiting their extension, and in hastening cicatrization when it once commences. In acceding, however, to a patient's wishes in employing these modified measures, it must never be forgotten that, so long as the specific character of the sore remains, the virulent bubo may occur; and hence the propriety of early and complete destruction of its specificity before any virulent absorption has taken place. When, however, a virulent bubo has commenced, no measures, whether derivative, soothing, stimulating, or revellent, can check its certain termination in suppuration; but in sluggish cases, where we may remain in doubt for some time as to its true character, such treatment may often be advisable. Even after suppuration has taken place, incision should be delayed until the purulent collection has made its way through the capsule of the gland, by which time the fluctuation will be distinct and the skin discoloured; then a free cracial incision should be made, so as to avoid the after-formation of sinuous tracks beneath the undermined skin; and at the end of a day or two, should the characters of the chancre appear in the incision which has been made, either caustic should be applied, so as to transform the specific ulcer into a simple sore, or nitrate of silver may be occasionally applied; and the whole surface of the ulcer should, from day to day, be carefully dressed with lint soaked in some astringent lotion, while pressure, by means of a pad and bandage, should be applied if there is any tendency to the continuance of chronic inflammatory swelling.

When phagedena attacks these sores, if they are limited in extent, cauterization, efficiently employed, will generally arrest its further progress, especially if ferruginous tonics are administered internally at the same time. Where, again, the ulcerating surfaces are very extensive, then certainly nothing acts so much like a charm in checking ulceration and promoting the progress of cicatrization as the oft-renewed application to the surface of a strong solution of tartarized iron, and the concomitant employment of large doses of the same salt internally, with the administration of stimulants and nutritious articles of food, of such kind and in such quantities as the patient can take most readily, and as the state of his pulse and system generally appears to indicate that he requires. Constitutional remedies to purify the blood, or to prevent the occurrence of constitutional infection, are quite uncalled for; mercurials can do no good, and, as experience shows, when carelessly administered they are a very common cause of the invasion of phagedena.

2*d.* *The Indurated Infecting Chancre*—The Hunterian Chancre—Primary Syphilis.

When a well-marked example of the indurated chancre has been once seen, and its characters recognised, there is no difficulty in knowing it at once when it again presents itself. These characters, however, present different degrees of intensity, and may be obscured by various local and constitutional conditions to such an extent as sometimes to prevent, or at all events to delay, our arriving at an absolute diagnosis. To avoid such confusion in description, we will first describe the characters of a pattern or standard example of an indurated chancre, and then point out what are the modifying influences which come into operation, and what effects they produce upon the characters of the chancre.

*The surface* of the sore is smoother, of a less worm-eaten and irregular appearance, than the soft chancre; it has a glossy appearance, as if it had been varnished; its colour is usually of a dark grey, varied with a russet or purplish tint.

*The margins*, of a uniformly rounded or oval form, are elevated above the centre of the sore; and their whitish hue, as contrasted with the comparatively dark colour of the surface, makes them appear to stand out in bold relief. There is no edge proper to the margins, for they descend with a gentle slope towards the surface of the ulcer, giving to it generally the aspect of having been gouged out of the tissues of the part.

*The discharge* is usually small in quantity, of a thick and gummy consistence, of a sero-sanguinolent character, but possessing no naked eye or microscopic specialism by means of which it could without fail be recognised. It speedily loses all specificity so far as inoculation in the individual who suffers from it is concerned, and hence indurated chancres are usually *solitary;* but, so long as the sore exists, the discharge rendered from it is apparently capable of inoculation, with specific effects, in virgin subjects.

*Pain* is by no means a characteristic of the indurated chancre; in fact, in many cases so little pain is experienced in any period of the existence of the sore, that its very existence is constantly overlooked by patients.

While *the indurated condition of the subjacent and surrounding parts constitutes the* specific characteristic of the infecting chancre, this is not usually or necessarily accompanied by any inflammatory blush such as would direct attention to its existence. Still, it is something quite *sui generis*, and more nearly resembles a thin and elastic bit of cartilage enclosed within the tissues of the part in which the sore is situated than any other normal tissue with which we are acquainted. This induration is confined to the immediate surface and margins of the sore, being, as John Hunter said, "circumscribed, not diffusing itself gradually and imperceptibly into surrounding parts, but terminating rather abruptly." Its size and extent, therefore, varies with the size of the sore; sometimes no larger than a barley pickle, it is at other times as large as a garden bean, but always distinct from the parts in which it is, as it were, implanted.

The infecting chancre usually becomes very speedily arrested in its extension. Where it is small in size, cicatrization rapidly ensues; where of large extent, cicatrization may sometimes be long delayed. The cicatrix which forms usually retains the pathognomonic induration of the sore, and is frequently characterized by a macular discoloration.

In the earlier stages of an indurated chancre, although the constitution may apparently be unaffected, before six months have elapsed some remote manifestation of the evolution of the syphilitic diathesis will infallibly point to the infection of the system.

Such are the characteristics of a model indurated infecting chancre—a Hunterian chancre, as in this country it is usually called; but every infecting chancre has not these characters so well marked, and to the varieties which occur we would now wish to direct attention.

1*st. With reference to the Characters of the Sore.*—The indurated chancre is usually speedily limited; but at times, like the soft chancre, it may be attacked by phagedena. This is, however, a rare occurrence; but its occasional appearance, as a complication of the indurated chancre, serves to explain the importance which Mr Carmichael attached to the phagedenic chancre as prognostic of the very worst form of tertiary syphilis, but which must, of course, remain quite inexplicable to those who consider phagedena as the prerogative of the soft chancre, or, in their language of experience, regard the occurrence of phagedena as affording a certain immunity against any constitutional infection.

This fact of the occurrence of phagedena as a complication of the indurated chancre has a further important practical bearing. The older surgeons remarked, that, while the administration of mercurials in most cases of phagedenic chancre was productive of the most disastrous results, there were cases, on the other hand, in which the careful employment of mercury tended to arrest the unhealthy action and improve the characters of the sore. These exceptional, and to them inexplicable cases, we now recognise as examples of the phagedenic indurated chancre, and believe that the remedial agency was due to the effect produced upon the induration, not the phagedenism, of the sore.

2*d. Varieties with reference to the Induration of the Sore.*—Well-marked examples of the indurated chancre are very rare; so much so, that we have known a surgeon of very extensive hospital practice speak of having seen, in the course of his experience, only two or three real Hunterian chancres. Now, if this is the case, and if constitutional syphilis is very common, and if the indurated chancre is the inevitable preliminary of syphilis, it is perfectly obvious that there must be some variety in this symptom of induration which renders its recognition less simple than appeared at first sight. We find, accordingly, that it varies with the tissues in which the sore is implanted; and so very marked is this, in some instances, that some surgeons (such as Mr Holmes Coote) have attributed the induration of the chancre, not to its specific character, but simply to the laxness of the tissue in which it is situated. While, however, experience cannot support such a doctrine, there can be no doubt that wherever the tissues are loose, and possess a large number of lymphatic vessels, then the induration of a chancre is always most developed. This is well seen in chancres situated in the sulcus, behind the glacis penis, on the prepuce, on the lips, etc., where the ulcer may be sometimes seen so raised upon its indurated base as to constitute a positive *ulcus elevatum*. Again, in some other situations, such as the *carunculæ myrtiformes* on the mucous membrane of the vagina, and within the anus, the induration is so slight, that except to the *tactus eruditus* of an experienced practitioner, if this character is alone referred to, the essential nature of the sore may easily enough be overlooked.

But the induration also varies with the period at which we examine the sore to test its presence. Induration is always an early symptom of an infecting chancre; if a chancre is to be a source of infection, the induration will appear about the third, and rarely later than the seventh day after the commencement of the sore; but having once appeared, unless developed in a very characteristic degree, it may be evanescent, often, as Ricord says, "disappearing before the work of reparation is finished, and before cicatrization is complete."

When the induration of an infecting chancre is but slightly developed, it has received from Ricord the title of "*Induration en surface*," *or* "*parchiminée*." Here we have no longer the characteristic cap-like mass of induration; but the sensation, when the base of the sore is gently manipulated by skilful and experienced fingers, is that of a bit of parchment implanted beneath the sore.

The diagnosis of the specific induration of the infecting chancre, therefore, is beset with difficulties; and as further difficulties may arise from the simulation of the indurated chancre by the artificial "*hardening*" of the textures around a soft chancre, it is incumbent on us to look for some other symptom which may assist us in arriving at something like precision in our diagnosis and prognosis.

We have seen how the simple gonorrhœa frequently was accompanied by the sympathetic inflammatory bubo, which rarely suppurates; how the soft chancre had its virulent bubo, which always suppurates; and we have now to study the bubo symptomatic of the indurated chancre. "Nihil in inguine quod non prius fuit in pene!"

says M. Diday, and certainly here we find in the bubo of the indurated chancre a counterpart of the induration of the sore itself.

This bubo symptomatic of the indurated chancre is a multiple indurated adinopathy of the neighbouring chain of lymphatics interposed between the part affected and the general lymphatic system. Between the enlarged glands and the sore, we can *usually* trace the lymphatic vessels enlarged, knotted, but painless.

The gland, into which these vessels open, is usually the most enlarged; the others vary in size in different cases, but their special characteristic is their induration. This induration, which communicates to the fingers the same sensation of cartilaginous hardness which we saw existed in the base of the chancre, is unaccompanied by any inflammatory tension, fusion of surrounding parts, or pain; and although the indurated enlargement may continue for an indefinitely long period, it has no tendency *as such* to undergo suppuration. No doubt suppuration may occur in these specifically enlarged glands, as in any other lymphatic chain, from the existence of any common cause of simple irritation, or from a soft chancre occurring as a complication, a virulent bubo may be produced; but this constitutes no true exception to the constant indolent character of the bubo appertaining to the indurated chancre; for where suppuration does occur, it is not the result of the specific character of the sore, but produced by either a simple inflammatory or a virulent complication. A further peculiar feature of the indurated bubo is, that it is bi-lateral—that is to say, when the indurated sore exists in a central situation, such as the penis, the (inguinal) glands on both sides are characteristically enlarged.

The indurated bubo, furthermore, is very persistent; dating its commencement from the period at which the induration of the sore is first observed, it remains well defined for months, nay, frequently for years after the sore has healed. Such a constant, well-marked, persistent accompaniment of the indurated chancre is of the very greatest importance in the diagnosis of venereal diseases. It serves infallibly to indicate the true character of a sore; it serves with unfailing certainty to indicate the source of a syphilitic eruption when all trace of the sore has disappeared; and by means of it you may detect the existence of a chancre occupying an unusual locality; in fact, the "indurated multiple glandular pleiad," with its "*index*" gland, may be invoked as a witness with the greatest certainty, and depended on far more implicitly than any statements made by a patient; and although the exact site of the chancre which produced it may remain a mystery, which you either do not choose or fail in the circumstances to expiscate, you may safely act upon the indication which its existence affords in forming a prognosis of the likely progress of the case, and employ a course of treatment appropriate to the indurated chancre and its consequences.

To the prognosis and treatment of the indurated chancre we would now direct the reader's attention. The soft chancre, we saw, was a local affection, bounded in its influence by the first lymphatic gland in the neighbouring chain. In the indurated chancre the ulcer is comparatively a trifle; the real disease is the infection of the constitution, the syphilitic diathesis, which it has served to introduce. We saw that Ambrose Paré regarded the induration of the chancre as an indication of the inevitable syphilitic infection; but modern investigation tends to prove that the induration of the sore, as well as the induration of the bubo, is not merely the first step towards the infection of the system, but is in reality the reaction upon the part of the effect which has already been produced in the system. The indurated chancre is, therefore, rightly enough called primary syphilis, for it is the first outward manifestation of that constitutional infection which is fully developed in the induration; but when manifested in cutaneous eruption, it constitutes the confirmed pox, as our forefathers would have called it—the constitutional syphilis of our own days.

This constitutional disease, so commencing, is most regular in its further development. At its outset, a very obvious condition of chloroanæmia manifests itself, accompanied by a sense of lassitude, with neuralgic or rheumatic pains, cervical glandular enlargement, falling out of the hair, and certain eruptive manifestations, observable both upon the cutaneous and upon accessible mucous surface, and in the involvement of certain fibrous tissues.

These are the symptoms popularly called secondaries; and although only affecting the surface of the body, manifestly indicate the empoisonment of the whole system. Such symptoms are *certain* to make their appearance within the first six months after the occurrence of an infecting chancre. No treatment can prevent this evolution, though it may delay or confuse their regularity, and modify their severity. At a somewhat later period, symptoms commonly called *tertiary* make their appearance. They occur in the deeper seated tissues of the body, such as the cellular tissues, the bones, joints, and in the textures of organs. These symptoms rarely occur within the first six months; but, on the other hand, they continue to evolve and repeat themselves for an almost unlimited period. They are of a very much more serious nature, both as regards the part and system at large, than those we have just specified as secondary, and are so completely distinct as almost to constitute, as Hunter says, a different disease. The primary disease, the indurated chancre, is the only stage of syphilis which has been proved to be certainly contagious. Some have asseverated and adduced reputed facts in proof of the communicability of some of the forms of secondary eruption; and some have even gone so far as to assert that the blood of syphilitic patients, when brought into intimate contact with the textures of the body, through the medium of a wound, abrasion, or ulcerated surface, is capable of inducing secondary constitutional affections.

To avoid the risk of fallacy in investigations connected with this subject is almost impossible; for as syphilitic inoculations are devoid of results in persons already suffering from syphilis, the majority of facts which have been collected are derived from so-called physiological inoculations with the secretions or blood of individuals supposed to be suffering from secondary symptoms alone. Results, however, deduced from such facts cannot be regarded as unexceptionable; for, very possibly, the existence of an indurated sore, or some source of contamination other than the presumed one, but which has been overlooked, may have interfered to vitiate their certainty. It may be observed in those cases, again, where absolutely positive results have been believed to be attained after certain very *quis quis* attempts to induce inoculation with the secretions of supposed secondary affections introduced into the tissues of "virgin subjects," that there is a very great vagueness in the descriptions given of the different stages of the process by which the material for inoculation had been obtained, of the mode in which it had been employed, and of its immediate effects produced upon the part where it had been introduced; and as we find, besides, that these asserted facts are flatly contradicted by other similar experimental researches made upon their own persons by medical men of known integrity.[1] We are compelled, at the present stage of the question, to recur to the doctrine of Ricord, that we have as yet no evidence that secondary or tertiary syphilis has ever proved inoculable, or given rise to the development of secondary or tertiary symptoms.

The secondary form of the disease is, however, communicable from parent to child, and from the male parent to the female, through the medium of the fœtus. Such hereditary transmission is by no means, however, constant or inevitable, and becomes less and less likely as the diathesis becomes older. The tertiary symptoms, again, are not apparently communicable as such, even by hereditary transmission. It seems, however, very probable that, in some cases, children of a very scrofulous habit of body, owe this in no small degree to the fact, that one or other parent, or both, have been subjects of the syphilitic diathesis.

While the diathesis becomes, as it were, exhausted in its external manifestations, there is no well-authenticated example of its complete extinction. This permanence of the diathesis is evinced by the non-inoculability of the indurated chancre in persons who have once suffered from syphilis. In them the virus usually produces no effect whatever, or, at most, produces a chancre in which the characteristic induration is wholly wanting.

From the occasional production of sores, with all the characters of apparently simple soft chancres, by the fresh inoculation in a syphilitic patient of the virus of the indurated chancre, some have supposed that the syphilitic virus, by this mode of transmission, gradually loses its specific qualities, becoming exhausted as it were, and thus, after repeated transmission, no longer capable of infecting the economy, but producing merely a local disease. Some have accordingly attributed the soft chancre to this source, considering it as a mere variety of the infecting chancre; and, from analogy, attempted to explain the very modified symptoms of the syphilis of the present day, as compared with the disease as described by authors of the fifteenth century. Indeed, this supposed exhaustion of the potency of the syphilitic virus has been employed as an argument in support of the practice of artificial syphilitic inoculation, as a means of exterminating the syphilitic virus generally; and it has actually been proposed that, as we vaccinate children to save them from variola, we should also *syphilize* every infant that comes into the world, in order to modify the type of syphilis—in other words, that the whole world should be poxed, that the pox may be arrested. Even admitting, for the sake of argument, that the practical development of this proposal could afford any advantage (to the immediately succeeding generation, it most certainly could only do an incalculable amount of mischief), the whole theoretical superstructure is founded upon two false assumptions :—1*st*, that the soft chancre is essentially the same with the indurated, being merely a modification of it; and, 2*d*, that the indurated chancre is absolutely incapable of effecting an inoculation in (*a*) a patient who has already been "*saturated*" with the virus of the soft chancre, or, according to others, (*b*) who has already been the subject of a true syphilitic infection.

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[1] *e.g.*, Cullerier, Fournier, Sanhos, Rathir, and Lindmann.

The first statement, and the first part of the second, our readers must already recognise as untenable; and as to the second part of the second statement, although so far true, it is not definitively so. For while it is indubitable that the indurated chancre cannot appear as such in an individual who has once suffered from syphilis, and that if any result whatever is obtained, in him it is only a chancre with a soft base. It is equally certain, that the pus from such a chancre inoculated in an individual who has never previously suffered from syphilis, again reproduces the chancre with the indurated base, with its characteristic bubo, and with its constitutional symptoms. The chancre, then, with a soft base, which occurs in a syphilitic patient, may be either essentially a soft non-infecting chancre, derived from a similar source, and transmissible as such, or it may be the temporary nidus of the virus of the infecting chancre, derived from such, and transmitted as such,—only remarkable in this, that it wants its specific characteristics; and these characteristics, viz., induration of the base, and the indurated multiple bubo, are only absent, because, as we have seen, they constitute a part of the syphilitic diathesis, and, unless a diathesis becomes extinguished, its symptoms cannot be reproduced in the same individual.

In treating the indurated chancre, then, it is a diathesis, not a mere local disease, with which we have to deal. The local disease is comparatively a trivial, painless, limited affair, and will get well almost of its own accord, if only we attend to the infected state of the constitution. In the soft chancre, we said that the whole disease might be destroyed by the efficient cauterization of the sore, and some have supposed that by a sufficiently early destruction of an indurated chancre, the irradiation of the poison throughout the economy and the establishment of the diathesis may be prevented. When the specific induration and the pathognomonic bubo have appeared, as they are symptomatic of the constitutional intoxication, it is, of course, too late to employ ectrotic measures—the period is past when we can "punch out the primary," when we can "nip the syphilis in the bud," as Ricord has expressed it. But before this infection has occurred, in that uncertain period which intervenes between the appearance of the sore and the first evidence of its having produced constitutional effects, it may reasonably be asked, Is there no period in which the employment of cauterization will destroy the focus from which it is about to irradiate its baneful influence? Ricord has replied in the affirmative; and, from his extended experience, has taught for many years, that infection has never been known to follow upon chancres which have been effectually cauterized within the first four days from their appearance. Professor Sigmund of Vienna, although he similarly limits the period of certainty in the destruction of the chancre, and with it all further effects, to the fourth day, believes that the fifth day is not too late to prevent absorption, and even practises ectrosis much later. It must of course be remarked, that during this period, as every pathognomonic symptom is absent, the sore, to all appearance, is a mere soft chancre; and this fact merely renders the general rule, already laid down, of efficiently destroying every soft chancre, only more obligatory than it seemed before. At the same time, more recent experience tends to throw doubt upon the absolute certainty of the results obtained from protective cauterization, even when practised at the earliest possible period. Dr A. Dron,[1]—pointing to the analogies of the virus of vaccinia of glanders and farcy, and comparing them with the experiences of M. Diday and M. Langlebert in the ineffective destruction of infecting chancres, before either induration of the sore or specific adinopathy had appeared, although practised within hours, instead of days, from the appearance of the sores,—has concluded, that as soon as the chancre has made its appearance, abortive measures are too late; and that the constitutional infection will inevitably occur. Still, for other reasons, he thinks the rule imperative, and recommends the use of caustic at this stage:—1*st*, Because we are as yet uncertain whether the chancre will prove indurated (*i.e.*, infecting), or soft and non-infecting; and, therefore, lest it should prove to be the latter, cauterization is to be employed.

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[1] In his paper upon the "Destruction of Chancres," in the *Annuaire de la Syphilis, etc.*

2*d*, Although it cannot prevent the patient from suffering from syphilis, by its employment we can prevent the transmission of the disease to another individual.

Should the patient, however, object to the use of caustics (as he very naturally may, when we can promise him by their use no certain immunity from the constitutional disease which he dreads above everything), then any simple dressing of a slightly astringent and stimulating kind will suffice in most cases to provide for the speedy cicatrization of the sore. Should it again prove tedious from the amount of induration deposit, either blistering or the occasional application of the nitrate of silver will usually effect its healing. At times, however, such sores, when of large size, resist all local treatment; but as soon as the system is brought under the influence of constitutional remedies, the tawny varnished surface becomes covered with healthy granulations, the thick white ring of induration smooths down to the same level with the surface of the sore, and contraction of the cicatricial pellicle rapidly ensues.

But our attention must not be limited to the sore alone. We have a diathesis to treat. Its evolution is impending. Our object should be to ward it off—to mitigate, if we cannot altogether prevent, its development. Are there any means, then, at our disposal by which we can fulfil such indications? The older writers upon venereal diseases had no difficulty in replying at once affirmatively to this all-important question. They believed in a universal venereal virus, and mercury was its constant antidote. Had a patient a sore? Mercury was the agent by which it could be healed! Were constitutional symptoms apprehended? Mercury was a sure preventive! Did they, nevertheless, appear? Mercury sufficient had not been given! more mercury still must be administered! Had a patient the venereal? Well, run him up with mercury from morning to night, till his face blanched, and his tongue was swollen, and his teeth were loose, and the saliva ran in pints from his slavering lips. Such was the reign of mercury! Mercury triumphant! Mercury and the mercurialists run mad! Those were the days when there were lodging-houses kept for the use of young gentlemen who required to go through a course of mercury, as it was called; for it was seldom that a young man could remain with his friends, and undergo the severe discipline to which the surgeons of those days thought it necessary to subject him. But while mercury was deemed essential in all cases of so-called syphilis in this and other countries in Europe, sudorific decoctions and diet drinks were found in warmer and more genial climates to obtain quite as great a success as the mercurial treatment in the supposed prevention and cure of the constitutional symptoms. Such success very naturally led to the adoption of a similar plan of treatment by professional men in Europe; and, so far as the supposed prevention of the constitutional symptoms was concerned, it was found that pretty nearly the same results attended the use of "the decoction of the woods" as was obtained by the employment of mercury; while, under the non-mercurial treatment, phagedenic ulceration, caries, and necrosis were very much less common accompaniments of the advanced stages of the disease. Since that period, however, various waves of fashion in the treatment of venereal diseases have passed over the face of the world; and while one remedy and then another has gained a great reputation, it is a remarkable fact that there are few men of practical experience, whatever their theoretical leanings, who will not admit that there are many cases of syphilis which resist all *non*-mercurial treatment.

In considering the advantages of a mercurial or non-mercurial treatment, one great source of fallacy will be removed, if the doctrines of the essentially local character of some sores, and the inevitable constitutional irradiation of the poison producing others, is admitted. It will then be obvious that all comparative estimates of the number of cases of chancres in which constitutional symptoms made their appearance, with and without the employment of mercury, are simply coincidences, and must have been due, not to the treatment, but to the original essential characters of the sores. The dogmatic statement of the non-mercurialists, that "all kinds of sores, or primary symptoms of syphilis, may be cured without mercury," although readily assented to, so far as the sore itself is concerned, in the case of most indurated chancres, and admitted as perfectly correct in those sores which are soft chancres, must be carefully understood to have no reference to the constitutional disease, which is the inevitable accompaniment of the indurated form of sore. But when they advance a step further, and tell us, "there are good grounds for believing that, in the majority of cases, where secondary symptoms have occurred, when the primary symptoms have been treated with mercury, that the secondary symptoms have been more severe and more intractable than where mercury had not been used for the primary sore," we demur to the accuracy of this deduction, and, admitting their facts to be correct, attribute these results to one of two things: 1*st*, the poisonous extent to which the remedy must have been given; and 2*d*, to their having, in their own practice, restricted the employment of mercurials to the very worst cases of indurated sore, which, as they were obstinate in their commencement, might be expected to prove equally serious in their further manifestation.

While, then, we readily admit that the indiscriminate administration of mercury in every case of chancre which comes under our notice, and more especially if carried to the well-nigh poisonous extent of profuse and continued salivation, can only be injurious, and give to any comparative estimate a great preponderance in favour of the non-mercurial treatment, we do claim for the judicious and careful administration of mercurials in the treatment of the syphilitic diathesis results which, in cold climates at all events, cannot be attained by any other mode of treatment. We do not claim for mercury any specific influence by means of which it follows out the syphilitic virus, and neutralizes it; nor do we maintain that, in order completely to extinguish the diathesis, it only requires that a certain indefinite quantity of mercury must be given. We merely claim for mercury an eliminative power, by means of which a rapid metamorphosis of tissue is effected, and the symptoms of syphilis are hurried through their regular evolution by the elimination of those modifications of tissue which the introduction of the syphilitic virus has produced. So long, then, as any modified tissue constituting a nucleus or centre of infection exists, unmodified or uneliminated by the restoration of the tissue to its original typical condition, a fresh outbreak of the constitutional manifestation may occur. So long, therefore, as we are unable to judge of the extent or degree of modification of tissue produced by the syphilitic virus, it must of course remain problematical how much of the eliminating material should be administered. In estimating the period during which mercury should be given, Ricord practically recommends that mercurials in daily doses should be taken for six months. Dupuytren, again, gave mercury so long as any secondary constitutional symptoms appeared, and then continued its use for as long a period thereafter. Some practitioners recommend its continuance for a few weeks, some for a few days only, after *every symptom* of the disease has disappeared. This, however, is a very doubtful period; for it depends entirely upon what is meant by *every* symptom;—some intending by that term merely to indicate the cutaneous manifestations and the induration of the cicatrix of the original sore; others, again, more reasonably including the indurated adinopathy as constituting a part of the disease.

However much doubt may exist as to the length of time mercurials should be given, there is at the present day but one opinion as to the effect which the drug should be permitted to produce when given. Whenever the gentlest possible physiological effect of the mercurial has occurred, then the full therapeutic effect has been attained, and anything further must prove injurious. Whenever the gums become tender, our eliminative ultimatum has been reached; and all we can hope to attain by the employment of the remedy will be gained by keeping up this condition for such a period of time as it seems to act, by improving the general health of the patient. Should the mercurial treatment tend to affect the mouth too readily, or actually to induce salivation before we can check its administration, the chlorate of potash, given internally, will be found admirably suited to check its poisonous and irritative effects. And this fact is now so generally admitted, that, by many surgeons, mercurials are never administered with the view of affecting the system at large, without at the same time giving the chlorate of potash to act as a corrigent, and so to prevent what it is generally recognised as well suited to cure.

It is with some persons a disputed point, at what period in the progress of the syphilitic infection the use of mercury should be commenced. Some, such as Ricord and most English practitioners, give it at the very outset,—so soon, in fact, as the characters of the indurated infecting chancre have appeared; while others reserve its employment against the first manifestation of a cutaneous eruption, or even restrict its use to the period of the squamous efflorescence of lepra and psoriasis. If any doubt exists in the diagnosis of the true character of the sore, by all means defer all specific treatment. If the disease turn out to be a soft chancre, the use of mercury might have been quite injurious,—at all events it is unnecessary; and by giving it, you prevent anything like absolute certainty as to the true nature of the sore and its consequences; for the undoubted effect of the remedy is to disturb, and even to prevent the natural evolution of the external manifestation of the diathesis. But where the case is an indubitable one of an indurated chancre, then the mercurial treatment should be commenced without any delay, with the view of preventing the outward manifestations of the diathesis. Some have feared that all such treatment, calculated as we see it is to arrest the external evolution of the diathesis, may, like the wolf shut up in the sheepfold, do untold mischief, while there is a semblance of outward security. Such speculations, however, have no foundation in anything but the superstition of a vague and antiquated humoral pathology.

Some practitioners and patients, however, have a dread of the use of mercury in the treatment of syphilis which might be said almost to amount to a monomania. In some cases, this is traceable to the prejudices of early education and limited practical experience; in others, to popular prejudice, or a melancholy personal experience of mercurial poisoning on some previous occasion. In such instances, although we believe that mercury, properly administered, is the most safe and certain method of arresting the manifestation of syphilis and preventing its hereditary transmission, we have no hesitation, where prejudice exists, in complying with the wishes of the patient, and giving what we believe to be not so good, but still undoubtedly useful, in effecting the expulsion of the disease from the economy,—such as the hydriodate of potash or soda, guiacum, mezercon, sarsaparilla, diuretics and sudorifics, and the employment of warm bathing, the vapour bath, a regulated diet, moderate exercise, and the avoidance of exposure, or of any cause likely to determine a fresh accession of constitutional symptoms. There are cases, too, where in any circumstances a tonic treatment is quite essential; as, for example, in those rare cases where the indurated sore is phagedenic, when tartarized iron will be found invaluable; or, again, when the symptoms of chloro-anæmia are accompanied with great lassitude and debility, then, besides the iron, quinine and stimulants must be employed. In very scrofulous cases, too, where mercurials will generally be found to be badly borne; then iodide of iron and arsenic, zinc, and cod-liver oil should be rather confided in. We must remember, too, as the disease gets older in the system, mercury becomes less useful than at first, and that the therapeutic effects of mercury are most markedly apparent in the early secondary symptoms; when these merge into the tertiary stage of the disease, then mercury either produces no effect whatever, or, if it is pushed, becomes an undoubted source of incalculable injury, hurrying on the destruction of the structurally altered textures by inducing suppuration, ulceration, and sloughing. It is in this, the tertiary stage of syphilis, that iodine in the form of hydriodate of potash comes to our help, and acts like magic both in improving the general health and in restoring the diseased tissues to their normal condition. Various vegetable tonics may render this more agreeable in its administration, and less irritating in large doses (which should always be employed); but there is nothing so specifically advantageous in the selection of sarsaparilla as to make it stand so high, as it undoubtedly does, in popular esteem. In its combination with iron, iodine will be found better borne in children, and more rapid in its good effects in anæmic males. At one time fears were prevalent that the continued employment of iodine would give rise to serious results, such as poisonous iodism and atrophy of the testicles. Iodism certainly is readily induced in many cases where there is no tertiary syphilitic taint; but in tertiary syphilis, iodine is well borne both by the stomach and the system in very large doses without producing discomfort or doing any injury. The supposed effect of iodine in producing atrophy of the testicles, is founded upon the fact, that in cases of syphilitic sarcocele of long standing, when the diseased condition is removed under the use of iodine, the organ is frequently found to become completely atrophied, and, on dissection, little of the tubular structure remains. But this atrophic state is due not to the iodine, but to the pressure of the tertiary syphilitic tubercular deposit. Of course, therefore, when the deposit is absorbed, the condition of atrophy, which had been previously disguised, is now revealed. The local treatment of tertiary syphilis consists, generally, in the use of blisters; in the application of stimulating lotions and applications to open surfaces, and occasionally, where sloughing cellular tissue-sores resist these other means of stimulation, in the application of potassa fusa, to destroy the lowly organized texture involved in the syphilitic tubercular deposit. Such, then, is a very meagre and brief sketch of the most approved principles upon which the treatment of syphilis should be conducted. One word further remains to be said with reference to a novel method, which has been much spoken of as a means of effecting the elimination of the syphilitic diathesis. We allude to curative syphilization. This method of treatment has, so far as we can see, no theoretical basis upon which it can stand; it has only the results of alleged success in its favour. This so-called remedy consists in the inoculation of chancres every third day upon the sides of the patient's trunk, until no further inoculation can be effected. Fresh virus is then obtained, and the inoculations proceeded with. When the sides become proof against any further inoculation, then the skin of the thighs is subjected to the same process, until they too, in turn, become proof against the influences of the virus. The patient is then supposed to be completely syphilized. (?) And it is said that the induration of the original chancre disappears during this process, buboes are beneficially affected, secondary eruptions and iritis are cured, and that even tertiary affections, such as periostitis and necrosis, get well under its magic influence. This so-called cure has been obtained by a period of continuous inoculation, extending, in Dr Sperino's published experience, over a period varying in different cases from one to seventeen months; and the majority of cases so cured were under treatment for the longest period. Under any circumstances, such a nasty, filthy mode of alleged cure is not likely to find much favour in this country. But, looking at it speculatively, it becomes at once obvious that this term of syphilization is a palpable misnomer, as it is no syphilization at all. *That*, from what we have seen, the patient acquired when he contracted the indurated chancre; and having once become the subject of the syphilitic diathesis, he has acquired an immunity against all further repetition of the diathesis. If the matter of an indurated chancre is inoculated upon him, it usually produces no effect whatever; or, if it does, the sore is a mere soft-based sore, which produces no effects whatever, but cicatrizes rapidly. If, then, Dr Sperino, M. Auzias Turenne, and Professor Boeck are correct in their statements, that this inoculation is so easily practised, it must be with the matter of soft, non-infecting chancres that they have inoculated their patients: they have *chancerized* their patients, if they please, but not *syphilized* them! And such, in fact, seems to be the case; for the examples of inoculation given by Professor Boeck of Christiania are obviously produced by the virus of the simple, soft chancre, and not by the indurated, which, as we have seen, is the only possible source of syphilis. These so-called cures, then, of this all-prevalent diathesis are, after all, effected in reality by a mere local irritation, attended by a long-continued suppuration spread over some extent of surface; and an interesting fact, which bears out the truth of this explanation, is, that Professor Fayo, also of Christiania, finds that repeated inoculations with tartarized antimony, the introduction of seton,—and others, that repeated blisters, produce equally good results, and in as short a space of time, as the so-called process of syphilization.

Such being the case, we must resort again to what we have already said, that there is no specific treatment which is calculated to *cure* syphilis. Various methods may serve to effect its elimination; and in our choice of these, we must be regulated by the constitution and circumstances of the patient, the stage of the disease, and the generally admitted fact, that ever since its commencement, mercurials have been found, when properly employed, to effect this elimination more speedily and more persistently than any other plan of treatment which for a time has obtained a great reputation.

## LETTERS FROM VIENNA.—No. III.

### EDITED BY DR MERCER ADAM.

WE have lately been much interested in Vienna by RILLIET'S views on Iodine and Iodism;[1] but the subject is no novelty here: for, as you may probably be aware, investigations on iodine have been made during every decennial period for a length of time; and the experiments of our Chief-Surgeon MOJSISOVICS, in the end of the third decennium of this century, are so well known that my statement requires no further confirmation. At the present time also, the various preparations of iodine are probably more extensively used in Vienna than in any other European city. This is owing not only to the fact that, in antagonism to the views of the mercurialists, iodine is administered in nearly all syphilitic cases, but also to the great prevalence in our hospitals of a

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[1] Dr Rilliet of Geneva, along with some other physicians in that place, has lately published some very remarkable investigations on the subject of what he terms "Constitutional Iodism,"—a condition which has hitherto been very little understood. His views were presented by Trousseau to the *Academie de Medicine* last year (vide *Bull. de l'Acad.*, Feb. 1860). Rilliet recognises three distinct varieties of iodine-poisoning, which are more or less allied to each other. The *first* class of cases is caused by the administration of large doses of iodine, and is common to persons of every age, sex, and country. It simply manifests itself by acute irritation of the alimentary canal. The *second* class is not so common as the foregoing, because it depends on a pre-existing susceptibility of certain organs to its occurrence; but it also may happen among persons of all nations, of any age, and alike in health and sickness. It also arises from the administration of large doses of iodine; and it is characterized by various nervous symptoms (such as neuralgia, tinnitus aurium, and convulsive twitchings, etc.), by alterations in the secretions; by sneezing, ophthalmia, salivation, vomiting, diarrhœa, etc.; and by various skin affections, from simple erythema to the maculated disease of Werlhoff. There may be also atrophy of certain glands, as the testes and mammæ.

The *third* form of iodism, however, is much less known than the types I have described, and it is much more remarkable in its characteristics. This condition has been called "Iodine Saturation" by Coindet (in 1820); it is analogous to the "Iodine Cachexia" of other authors; and Rilliet terms it "Constitutional Iodism." Unlike the preceding forms, it does not depend on the administration of *large* doses of iodine; for, in those who are predisposed, it may result from the *smallest possible* quantities of the drug; nay, even, it is said, from inhalation of the breeze during a residence on the sea-shore! Rilliet considers class of diseases which specially demand the employment of this agent. The frequency of struma, especially in the form of goître, in Austria, is well known; for there are whole provinces where it prevails to such an extent, that it is quite exceptional to see a man whose throat is not swollen and deformed. Consequently there is no scarcity of individuals who are predisposed to that condition which Rilliet—in words pregnant with meaning—terms "Constitutional Iodism." You have therefore a right to expect a good deal of information on this curious question, from the great opportunities for observation which we possess in Vienna; and, as the subject is one of great interest and importance to every scientific man, I shall endeavour to condense in the following remarks the conclusions arrived at by our medical college (*Doctoren Collegium*).

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that goîtrous individuals are specially susceptible of "constitutional iodism." Its appearance is influenced by *age;* it is rarely seen before the twentieth year, but the proclivity to it increases gradually after thirty. Women are more liable to it than men, just as they are also more frequently the subjects of goître. As an illustration of this special "Iodine-idiosyncrasy," there is a curious case, recorded by Hiffelsheim, in which a patient with chronic bronchitis became affected with iodism after taking a table-spoonful of cod-liver oil night and morning for a period of three weeks.

The most prominent feature in constitutional iodism consists in *rapid emaciation;* and this is usually accompanied by increased appetite, and nervous palpitation of the heart. This emaciation is the first symptom which attracts attention, usually beginning with sudden atrophy of the testes and mammæ, and disappearance of the goîtrous tumour. This atrophy of the tissues is not solely referable, as some have thought, to an inflammatory condition of the stomach; but it also depends on the innervating influence which iodine exercises over the general nutritive functions. The appetite is usually ravenous all throughout the disease. Nervous palpitation of the heart, great prostration of strength, pale or yellowish-green complexion, loss of voice, restlessness, despondency and hypochondriasis, are also common in severe cases of iodism. Yet, although the symptoms are so violent, Rilliet says that the cases rarely end fatally. He generally gives anti-spasmodics and narcotics to relieve the nervous affections; bismuth to allay gastric irritation; tonics and analeptic agents to recruit the failing vital powers; and prescribes change of scene and the fresh breezes of a mountainous district during the treatment.

Locality has probably as much to do with the production of iodism as the idiosyncrasy described. The smallest doses of iodides in Geneva (particularly if taken along with common salt), produce this condition; while it is well known that in other places (such as Paris), large doses of the preparations of iodine can be taken with positive benefit.

Singularly enough, at the very time when Trousseau presented Rilliet's monograph to the Académie de Medicine, another paper on the same subject was laid before the society, by M. Boinet, on "Alimentation Iodée." This author, instead of dreading any bad results from the use of iodine, regards it as such a very beneficial agent, and so essential to animal life, that he recommends its

Dr Schneller, who was the first speaker, said that he had, during a practice extending over 20 years, treated 290 cases with iodine, and its preparations, and with mineral waters containing that mineral.[1] He divides his cases into two classes: the first and larger group comprising those which were not of a distinctly strumous character; the other composed exclusively of strumous or goîtrous patients.

The former class was chiefly made up of individuals in whom scrofula was latent or torpid. Many suffered from some form of syphilis localized in the bones, joints, eyes, or mucous membranes, and had this disease complicated with the mercurial or the scrofulous diathesis. Others were affected with simple catarrh of the laryngeal mucous membrane; or had some of the numerous kinds of clonic spasms; or presented some of the varieties of paralysis which are met with in scrofulo-syphilitic people, as the result of intracranial hyperostosis, or disease of the envelopes of the brain and spinal cord. His patients were of all ages, from infancy upwards; rich as well as poor; males and females, and of every variety of temperament. He generally administered the iodide of potassium in minimum doses of 1 to 3 grs. a-day, dissolved in distilled water; and he even gave as much, in some cases, as from 10 to 30 grs. daily, continued uninterruptedly during a period varying from one to three weeks. The medium doses consisted of 3-5 grs. per diem, continued for several months, with occasional interruptions in the administration. In a few instances he combined pure iodine with the iodide in doses of ½ gr. to 1 gr. a-day; and in about two dozen cases he gave burnt sponge (*spongia marina usta*), in the form of pills or powder, in doses of 5 to 10 grs. a-day. His favourite external application was an ointment composed of gr. x. to xxx. of potass. iodid. to ℥j. axungiæ,—to which, in a few rare cases, a little pure iodine was added. The mineral

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employment for the prevention as well as the cure of disease. The absence or deficiency of this principle is regarded by him as one of the causes of struma, cretinism, phthisis, etc.; and he therefore recommends iodine to be artificially mixed with the bread and other articles of our food, as a means of preserving the system in a state of health. Among the speakers in the discussion which ensued on these two memoirs was M. Ricord, who said, that although in the habit of prescribing it daily in large quantities, he had never witnessed any such effects as those described by Rilliet. Bouchardat saw nothing discordant in the views of the two writers, and considered the discrepancy of their observations to be attributable to the fact of iodine being very capricious in its physiological effects, and to the probability of locality having a great influence over its action.—ED.

[1] The Spa most in repute for cases requiring iodine is that of Hall, in Upper Austria. The water is a strong solution of common salt, and contains iodine (combined with soda and magnesia), and also a small quantity of bromine. The "*Haller Kropfwasser*" is in great favour as a cure for goîtrous complaints.—ED.

waters he used were those of Hall, and of the *Adelheidsquelle*,[1] which he gave in quantities of 2 to 4 oz. daily.

Schneller informs us that the symptoms arising from the continued internal use of iodine are the following: A bitter metallic taste; increased redness of the gums and pharynx; and a burning sensation, extending down the œsophagus. Sickness, retching, vomiting, cough, and hoarseness only occur in exceptional cases. The appetite usually improves during its administration, especially when (as in the case of the mineral waters) the iodine is given in combination with common salt. Along with a remarkable and peculiar odour, somewhat resembling that of chlorine, there usually occurs an unmistakeable and profuse Coryza, which often manifests itself in individuals who have never before suffered from this affection. Along with it there is often a catarrhal state of the conjunctival mucous membranes, which even extends occasionally into the Eustachian tubes. He never saw salivation produced, and very rarely any loosening of the teeth. Giddiness, double-vision, and muscæ volitantes were frequently complained of, and also trembling of the limbs. The pulse was usually quick. Where the patients were confined to bed, the skin was found to exhale the peculiar odour of iodine, and occasionally there was a papulous eruption, resembling urticaria. The urine was generally abundant, and smelt strongly of iodine; the stools were rather diminished in quantity. The drug seemed to exercise no particular influence over the catamenial functions. Iodine could be easily detected in all the secretions, as in the saliva, the sweat, the milk, etc. These symptoms were only observed in certain extreme cases, and in none of the cases in this class did Schneller ever witness rapid emaciation, or atrophy of the testes and mammæ. Nor did he ever notice any toxical or chemical influence exerted by the iodine which permanently impaired the health, or endangered the life of the individual.

As regards the external application of iodine to the patients of this class, he says that usually, after a little while, the skin assumed a yellowish tint, which was followed by a slight erythema, accompanied by great itching. Among the 225 cases comprised in this first class, he never saw any other complicated symptoms resulting from the continued use of iodine, or any condition allied to that which Rilliet has described as "Constitutional Iodism."

Schneller's second class is composed entirely of cases of struma;[2] but all scrofulous infiltrations and inflammatory tumours are excluded from it. The cases are 65 in number, and some of them seem clearly to prove—as he incidentally remarked—that, under the peculiar climatic circumstances in which they were placed, iodine is not *always* a radical cure for struma. Only 8 of these 65 cases were treated by iodine, given internally (in four by solutions of iodine or iod. potass., in three by burnt sponge, and in one by the Hall water); while in the remaining 57 the applications were external, and consisted generally of the ointment already described, and occasionally of epithems of the Hall water. Thirteen of the patients were males, the others females, and their ages ranged from five to fifty-four. He had not an opportunity of witnessing the symptoms in most of these patients; but he has given a full account of one case, because it appears to have been undoubtedly identical with the "constitutional iodism" described by Rilliet. A man, aged 36, of a naturally weak constitution, came under Schneller's treatment, on account of varicose ulcers of the leg, which had originated from an injury. Although born in Vienna, he had goître. The ulcers began to heal satisfactorily under the use of the remedies prescribed, and he was again able to use his limbs, although his bodily strength continued feeble. Three months afterwards, Schneller was called to visit his old patient. He found him very much altered. His face was pale, and wore a cachectic aspect; he was dreadfully emaciated; his hands and limbs trembled violently; he had no headache, but great vertigo, and complained of oppression at his chest, especially in the region of the false ribs, and of palpitation of the heart. There was a hacking dry cough; but auscultation detected no disease of the thoracic viscera. The pulse was soft and rapid. The appetite was diminished; and there was constant nausea, and inclination to vomit. The abdomen was not painful; the stools were normal; the urine plentiful, of a very pale colour. The skin was bedewed with sweat; there was no exanthema, but intolerable itching, which completely prevented sleep. The *goîtrous tumour was very much smaller.*

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[1] A celebrated water (containing considerable quantities of iodine and bromine, in combination with chloride of sodium and other earthy salts) in the village of Oberheilbrunn, in Bavaria. It is not very far from Munich.—Ed.

[2] Under this term Schneller appears to describe those cases in which there existed thyroid enlargements, as the result of the goîtrous diathesis.—Ed.

The patient confessed that for a length of time, without the knowledge of his physician, he had been using remedies for his goître; and that during the last fortnight he had taken about 180 grs. of burnt sponge, and had simultaneously rubbed the tumour with a strong iodine ointment. Schneller at once suspended these medicines, and ordered amylaceous diet, sponging of the skin with vinegar and water, and also frequent tepid baths. Under this treatment the itching and vertigo disappeared, appetite and sleep returned, nutrition went on well, and the patient quickly regained his strength. The tremulousness of the extremities still remained, however, though to a less marked extent; and although he completely recovered, he did not altogether lose his goître, his trembling, or his varicose ulcers. The swelling of the thyroid again reached an enormous size, and the patient died in 1851 of typhus fever.

The symptoms of this case are considered by Dr Schneller as identical with those of the "constitutional iodism" of Rilliet; and if the weak point in the evidence consists in the fact, that the subject treated was a person of impaired health and delicate constitution, it must, on the other hand, be remembered that this was the only case out of the 290 in which these symptoms supervened after the use of iodine. The doses by which it was induced were very small indeed; for burnt sponge contains barely 1 per cent. of iodide of sodium, and ½ per cent. of bromide of sodium. Yet it is to *small* doses of iodine that Rilliet attributes the production of iodism among strumous subjects; but in answer to this, Schneller observes, that the toxical influence of the drug was not observed in any of the 69 cases treated—with the exception of this patient—although, as the applications were all external, the amount of iodine absorbed must have been very small. He concludes, therefore, that iodine may be given for a length of time to goîtrous individuals, without the induction of constitutional iodism. Other accessory conditions exert an influence in this matter—probably either light or water—for how otherwise are we to account for the fact of one goîtrous person becoming affected with iodism, while another, under similar treatment, etc., remains exempt?

Finally, this author gives the following as the general conclusions which seem warranted by his observations :—

1. The existence of such a state as the "constitutional iodism" of Rilliet is a well-established fact, and it is only to be regarded as a novelty on account of the well-defined symptomatology given by Rilliet, and its recognition by him as a definite morbid condition; all the various symptoms by which it is characterized, having long been known to occur *individually* as occasional results of saturation of the system by iodine.

2. Iodism is an exceptional and rare occurrence; and it may result from small and medium, as well as from large doses of the drug.

3. Among those affected with struma, the elderly, rather than the weakly or excitable, are most prone to become the subjects of iodism.

4. The use of iodine, in all cases, demands the greatest care and the closest observation on the part of the physician who prescribes it.

Many other members of the College took part in the long discussion which ensued, and which extended over two sittings; and, finally, it was decided to appoint a committee to investigate the whole subject, and to report upon it to the College. I shall not fail to acquaint you with the results of their labours as soon as possible. It would be very desirable if the medical societies of your country, and elsewhere, would follow the example of ours, by devoting special attention to this subject, which possesses so much practical importance.

In social matters, almost every day brings us something new; for, here in Vienna, we are in a sort of transition state.

Professor Oppolzer has just been elected Rector Magnificus of our University. The Rector is chosen annually from the Faculties of Theology, Medicine, Law, and Philosophy in rotation, so that each Faculty has the honour of furnishing the representative once in every four years. The election is managed thus:—The *Professoren-Collegium* and the *Doctoren-Collegium* of each Faculty nominate two candidates from the official lists of the University; and the office is conferred on the one who obtains the greatest number of votes in Consistory. The voting is by ballot. Among the candidates who were this year nominated for Rector, were Professor Hyrtl, and Professor Pleischl, formerly Professor of Chemistry, from the Professoren-Collegium, and Professors Schuh and Oppolzer from the Doctoren-Collegium. According to one of the fundamental laws of the new constitution recently granted to Austria, the Rector Magnificus is now entitled to a seat and a vote in the Upper Parliament-House; so that the office has recently acquired great political importance, and is therefore an object of high ambition.

I am also glad to be able to tell you that a most marked and salutary change has taken place in the favour wherewith science is regarded by the State. It would seem that the State has at length learned the might of science by the bitter experiences of the past. Our new ministers, the RITTER VON SCHMER-

LING and PLENER, have recently both been made associates of our Professors' and Doctors' Colleges. The former attended at the Rectorial election, and received an ovation as being the Chief of Public Instruction. In his speech on that occasion, he expressed his earnest hope and desire that the jubilee of the University in 1865, on the 500th anniversary of its foundation, might be celebrated within a building of its own. We are in hopes of finding this expectation realized; for the speech was made by one who is himself a member of the University, and whose honesty and truthfulness are respected all over Austria.

Great excitement has been caused here, by an inquiry which has been made concerning the mismanagement and irregularities of the nurses and *Sœurs de Charité*, who have charge of the patients in one of our district hospitals, the *Bezirks Krankenhaus auf den Wieden.* What will your distinguished Miss Nightingale say when she reads the shameful account? I shall give you further details concerning this, and other topics of interest, in my next letter.

VIENNA, 5*th March* 1861.

# Part Third.

## PERISCOPE.

### MEDICINE.

#### ON NEURALGIA AS COMPLICATING CHLOROSIS. BY PROFESSOR TROUSSEAU.

It is rare to find a chlorotic patient who does not suffer from a neuralgic affection, whether frontal, temporo-frontal, intercostal, uterine, etc. It may be said, that every confirmed case of chlorosis is accompanied by neuralgia. But in chlorosis complicated with neuralgia, the therapeutical indication is double. It is evident that we must combat the chlorosis upon which the neuralgia depends; but, at the same time, we must relieve the latter as soon as possible, in order to put the patient in the most favourable conditions for recovery from the chlorosis. In fact, M. Trousseau, under these circumstances, does for the neuralgia what he does for pneumonia, accompanied with severe pain in the side. While employing suitable remedies against the pneumonia, he attacks the pain in the side with sulphate of morphine. By this means, M. Trousseau calms the pain, and as no pharmaceutical remedy is equal to six hours of sleep, this result has the great advantage of strengthening the patient, and of enabling him more effectually to resist the disease and the active treatment which it demands.

In the treatment of chlorosis, M. Trousseau prescribes iron, but only on condition that the patient is not affected with tubercles, or has not a well-marked tubercular tendency. According to this physician, no chlorotic female who has suffered from hæmoptysis, or who during childhood has presented manifestations of tuberculosis, whether as regards the skin or the mesenteric glands, should be allowed to take iron; for not only is iron prejudicial as a remedy in the scrofulous diathesis, but it is still more so, according to M. Trousseau, as combating a neurosis, the coexistence of which appears to delay the development of tubercles, and to constitute in regard to them a sort of antagonism.

The subject of the following observation was a young girl, nineteen years of age, who was admitted into the Hôtel-Dieu, under the care of M. Trousseau, about the beginning of January. This patient was chlorotic in the highest degree, and suffered almost constantly from so violent a pain in the right temporal region, that she could not obtain a moment of sleep. M. Trousseau at once ordered the patient to take two pills, containing three grains of sub-carbonate of iron, after each meal, to be gradually increased till twenty-two grains of iron were taken in the course of the day. It may be remarked in passing, that M. Trousseau attaches very little importance to the particular preparation of iron chosen. He has made comparative experiments with iron filings, iron reduced by hydrogen, the lactate and the phosphate of iron, but has not found one of these preparations superior to the others. Now, as an old horse shoe and a file are always to be found, it is better to order iron filings, particularly in the country, as this preparation is the cheapest, and within the means of every patient.

Accordingly, in the above case, M. Trousseau prescribed iron in pretty full doses. This treatment was indicated, but, energetic as it was, it could not at once modify the general condition, and thereby relieve the intensity of the neuralgia, which deprived the patient of sleep, and prevented her from taking food. It was accordingly very important to get rid of the neuralgic complication as soon as possible. With a view to this, M. Trousseau ordered the seat of pain to be covered with compresses saturated with the following solution :—

℞.—Cyanide of potassium, 15 grains.
Distilled water, 2½ ounces.

This topical application having failed, M. Trousseau decided upon employing ammoniacal blisters, followed by the endermic application of morphia. An ordinary thimble was filled four-fifths full with cotton ; the remaining fifth was occupied by a little piece of wadding saturated with the strongest liquor ammoniæ. This was placed over the temple, and retained there for three minutes. The thimble having been taken off, the skin was wiped with a rag, and the epidermis removed. A sixth of a grain of sulphate of morphia, suspended in a drop of water (with which it was mixed up in the palm of the hand), was applied to the exposed dermis. This was covered with a little piece of oiled silk, and the whole was retained in position by a piece of diachylon plaster. At the end of a minute, a feeling of heat was experienced; after two minutes there was slight headache; at the end of three minutes there was a feeling of general heaviness. An hour and a half after the application, the pain had ceased. The following day, the patient was found to have slept. The same treatment was repeated, care being taken to remove with fine forceps the pseudo-membranous pellicle with which the skin was covered, and which, in spite of its tenuity, would have afforded an impenetrable barrier to the absorption of the morphia. On the following day the treatment was continued, and the neuralgia was cured.

The chlorosis still remained. M. Trousseau ordered the patient to take daily, ten of the three-grain pills of *Vallet;*[1] the lips became coloured, the appetite returned, and in twenty days, if not cured, she will at least be going on favourably. If the appetite did not continue good, M. Trousseau would order her quinine and small doses of nux vomica.—*Journal de Médicine et de Chirurgie Pratiques*, February 1861.

### RAPID CURE OF CACHECTIC ERYSIPELAS BY THE PERCHLORIDE OF IRON. BY DR ARAN.

A poor clerk, twenty years of age, of delicate constitution, having suffered severely from hunger, cold, and several attacks of intermittent fever, having in addition, tubercles in the lungs, and bearing the most characteristic marks of constitutional syphilis, was admitted under the care of Dr Aran, on account of nearly universal dropsy. There was fluid in the pericardium, in both pleuræ, in the peritoneum; there was also œdema of the cellular tissue. There was no albumen in the urine, and no indication of disease of the heart. On admission, all were struck with his peculiar colour, but it was remarked that on the pale yellowish ground there was on the face, but particularly on the right cheek, a red coloration, and a doughy swelling. The patient afforded a good example of cachectic dropsy, with erysipelas of the same nature.

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[1] (The pills of Vallet consist of sulphate of iron and carbonate of soda, in the proportion of about five parts of the former to six of the latter, made into a mass with honey and syrup, and divided into three-grain pills.—Ed. *Edin. Med. Journal.*)

Dr Aran immediately prescribed thirty drops of solution of perchloride of iron, to be taken in the course of twenty-four hours, and by the next day the redness had diminished. The dose was increased to fifty drops, and the erysipelatous coloration disappeared. The quantity of the perchloride was gradually increased to a hundred drops, and the treatment was continued, with the object (which was attained) of modifying profoundly the economy, and thereby diminishing the amount of the serous effusions.

The taste of the perchloride being disagreeable, we must be careful to divide the total daily dose into a sufficient number of parts; to give, for example, from five to ten drops every two hours, in a glass containing a little sugar and water, and not in a silver spoon, and then to direct the patient to gargle his mouth immediately, in order to remove the inky taste which the medicine leaves. Thus administered, the perchloride of iron is highly serviceable in such cases as the above, in young children, and in women of broken down constitution, who are affected with erysipelas every month. The febrile condition is relieved within twenty-four hours, the patient has a remarkable feeling of improvement, the appetite increases, then the erysipelas becomes paler, and gradually disappears. The result is remarkable, but ought to be generally known, for the perchloride of iron is the surest and simplest means of getting rid of forms of erysipelas, which, without it, perpetuate themselves indefinitely.—*Journal de Médicine et de Chirurgie Pratiques*, February 1861. (The sudden death of the author of these remarks is recorded in another part of this *Journal.*)

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# QUARTERLY REPORT ON PHYSIOLOGY.

BY WILLIAM GILCHRIST, M.D.

## THE CIRCULATORY SYSTEM.

### ON THE PULSE AND VASCULAR BRUITS. BY J. MAREY.

In this, as in the following paper, M. Marey considers the pulse and vascular bruits as the mechanical effects of the movement of the blood in the vessels; and taking this view, he believes a study of these, to be successful, must be conducted on purely physical principles. No symptom has been less investigated on such principles than has been the pulse; and our knowledge of its meaning is consequently vague in the extreme.

The pulse may be defined as the effect, perceptible by touch, of the inequality in the tension of the blood of an artery. The frequency and the rhythm are not difficult to estimate, but the regularity of the pulse, as regards the intensity of each pulsation, is much more so; and the character of each pulsation in particular is so difficult to estimate, that we find the utmost confusion prevalent amongst physicians; and the latter is not diminished by a superabundant vocabulary of synonyms descriptive of the sensations conveyed to the finger of the observer. The study of arterial tension is the first step towards a better understanding of the pulse. To accomplish this, M. Marey invented an artificial heart and blood-vessel, on which he could observe alterations of tension at different points at the same time. It consisted of a caoutchouc pump compressible by the hand, attached to which was a long caoutchouc tube, on various points of which delicate levers were applied. On pumping water into the tube, these levers were simultaneously elevated; and by a farther mechanism they were made to scratch or write the changes of tension on a revolving cylinder, so that, by a comparison of the tracings, the character and the correspondence of the changes in tension at different points of the tube at the same time could be ascertained. As may be supposed, the pulsations of the elastic tube produce an ascending line and a descending line, corresponding to the ascent and descent of the levers, and denoting the dilatation and contraction of the elastic tube to which they are applied. As we cannot avail ourselves of figures, we shall employ the terms *line of ascent* and *line of descent* in describing the changes of tension.

The first result obtained by Marey's apparatus is, that *all the pulsations begin at the same time*, and there is consequently no real retardation of the pulse, as implied in the wave theory of Weber. This is obvious, from the fact that the *lines of ascent* produced by levers placed on different portions of the tube all begin at the same moment of time. The following differences exist in the character of the pulsation itself at different parts of the tube. 1. *The degree or amount of the pulsation decreases in proportion to the distance from the orifice of the entrance of the current.* This fact is at once seen in the lines drawn by the levers placed on an elastic tube. Near the pump the line of ascent of each pulsation is much higher than at points more distantly situated. This decrease in the degree of pulsation has been observed by all experimenters, and is termed "the extinction of the wave." 2. *The duration of the increase of tension increases in proportion as the orifice of exit of the current is approached.* An examination of the tracings shows that this is the case. Near the pump the dilatation of the vessel is expressed by a much shorter and more sudden line of ascent, than it is at some distance from the influx of the fluid: the period of dilatation occupies at first a very short time, but ultimately it comes to occupy half the whole time occupied by the pulsation, making the period of increasing and diminishing arterial tension equal. This is what gives rise to the appearance of retardation of the pulse.

The transformation of pulsations, as regards their degree and their duration in arteries at a distance from the heart, is to be attributed to elasticity. M. Marey found that in winter, when his caoutchouc tubes were hardened by the cold, the pulsation preserved for a long distance its initial characters, *i.e.*, a sudden, strong, and short dilatation. When treated with warm water, the pulsation was speedily modified, becoming at a little distance from the pump gradual and slow. An elastic pouch placed on the tube had the effect of modifying the pulsation just as a long extent of tube would do; and if the pouch was sufficiently large, all pulsation beyond it was extinguished. This is the explanation of the suppression of the pulse in aneurisms. In some cases the suppression is due to clots producing obstruction in the vessel; but in these cases partial or complete gangrene occurs in the parts beyond the aneurism. Cases of aneurism of the aorta sometimes produce extinction of the pulse in all the arteries of the body, and yet the patient lives. This is explained by the elasticity of the pouch modifying and transforming or completely extinguishing the pulsation. To ascertain the influence of calibre of vessel upon the pulsation, Marey designed the following experiment. To the one end of a Y-shaped glass tube was fitted a caoutchouc pump, and to each of the branches of the Y were attached caoutchouc tubes, one being much larger than the other. The delicate lever of a sphygmographion was now placed on a corresponding point of each tube, and water was pumped into them. The result was, that the dilatation was effected more briefly in the large tube than in the small one; in other words, the character of the pulsation was more transformed in the small than in the large. At first sight this appears at variance with what has been said of the effect of the elastic pouch; but if we reflect that, although there is a smaller extent of elastic surface in the small tube, there is also a greater obstacle to the flow of the fluid, and consequently a larger call upon the elasticity of the tube to overcome it, the difficulty disappears. Morbid dilatation of an artery gives rise to increased pulsation; this is why the arteries leading to an inflamed part throb more strongly than usual; though it is generally explained by attributing a greater *activity* to an inflamed part. In inflammation the small vessels lose their contractile force, and this atony extends to the arteries around. In fever vascular atony is general, and pulsation is accordingly modified. The changes produced in the nature of a pulsation by modifications of tension are extremely important, because they occur constantly in health and in disease. A change in the tension of an artery may be caused by a larger or smaller amount of fluid being propelled by the heart, or by an increased or diminished obstruction to the capillary circulation. In the present state of science, we have but little knowledge of the means of judging when the first of these causes is present. Of the second cause we may obtain some knowledge by studying it in elastic tubes. If a very narrow tube is fitted to a larger one, and water forced into them, the tension in the larger tube is considerably increased: to the finger it feels hard and incompressible, even in the intervals of pulsation; and the pulsation itself feels less the stronger the tension. This diminution of pulsation is made apparent by placing on the tube a lever of the sphygmographion, and the period of dilatation is seen nearly to equal that of collapse of the vessel, because the pump or the heart empties itself more slowly, and the elasticity of the vessels is more fully called forth. To show the effect of diminished tension, let us reverse the conditions, by fitting a larger to a less sized tube, and pump water through them. In this case the first tube is very depressible, the pulsation is much stronger, as shown by the lever, which rises high, suddenly and quickly, producing a sort of shock. To apply these facts to pathology, in pneumonia it is common to find a very *feeble* pulse in very plethoric subjects, and bleeding has the effect of giving amplitude to the pulsations. In animals, too, it has been found that the pulse increases in degree of pulsation as they are bled (Bernard). In both cases the high tension is reduced. In fever, where there is general relaxation of the contractile element of the vessels, the pulse is easily depressed, no feeling of a cord, and the pulsation itself is strong, although the general tension is weak. In chlorosis the blood passes more readily through the capillaries, and diminishes tension. The pulsation is strong and short, and the pulse more depressible than in health.

M. Marey's views as to the cause of the dicrotic pulse are founded on the clinical observation, that it is never to be found in the arteries of the lower extremities. He believes it to be due to the echo of a wave reflected at the inferior bifurcation of the aorta by the point or angle between the common iliac arteries. This view he supports by producing the dicrotic pulse artificially in circumstances where a point of opposition is offered to the passage of a fluid. Another condition is requisite, and that is, a very feeble tension of the blood; hence we find the dicrotic pulse in typhoid fever, in cachexias, more especially in the saturnine cachexias. In these diseases, though the general tension of the blood is diminished, that of the capillaries is increased; hence the tendency to hæmorrhage. The tension of the veins is also increased, and when the blood is very fluid, as after bleedings, a venous pulse may even be felt.

Connected with feeble arterial tension is the pulse of aortic insufficiency. Here there are two conditions to produce this peculiarity: 1st, there is a constant feeble arterial tension, which produces a larger pulsation; 2d, the reflux into the ventricle produces a depression of tension almost as sudden as the afflux. The line of ascent is vertical, as is also the line of descent.

In his experiments upon vascular bruits, Marey finds that these are not only or chiefly due to changes in the diameter of a vessel (chauveau), but to changes in arterial tension. They generally occur in diseases in which the arterial tension is much reduced (chlorosis, typhoid fever, etc.), and they are accompanied by, and may be predicted from, the pulse already described as peculiar to a diminished arterial tension.—*Journal de Physiologie.*

### RESEARCHES ON THE STATE OF THE CIRCULATION ACCORDING TO THE CHARACTERS OF THE PULSE, FURNISHED BY A NEW SPHYGMOGRAPHION. BY J. MAREY.

The instrument of M. Marey is constructed on the principles described in the foregoing paper. It is portable, and may be readily adapted to the human pulse. The special object attained by it is, a tracing on smoked paper of the form of a pulsation under different physiological conditions. The period of ascent of the lever, the summit of the curve, and the period of descent, may each offer a peculiarity. Besides, a complete pulsation may differ in its amplitude and in its duration.

The ascent of the lever corresponds to the diastole of the pulse, and the more *brusque* it is, the more vertical will be the line drawn on the paper. When the systole of the heart is short, the summit of the curve is simply an angle; but if the systole is long, the tension being at its height and incapable of increasing further, the summit of the curve described by the lever is a horizontal line, or slightly ascending or descending. The descent of the lever corresponds to the decrease of tension: if the line it describes is concave, the rapidity of the decrease is great; if it is convex, the decrease of tension is gradual. The sphygmographion shows that in health the pulse is almost *always dicrotic*. This dicrotism is, however, not perceptible to the finger, and it only becomes so when under morbid conditions: 1st, the heart contracts powerfully and quickly; 2d, the general arterial tension is very feeble. As regards the amplitude of the whole pulsation, it is, all things equal, in inverse proportion to the arterial tension. The duration of the pulsation is proportionate to the frequency of the pulse.

By means of his instrument, Marcy studied the effect of various physiological influences on arterial tension. 1st, The influence of attitude: In the horizontal position the arterial tension is greater than in the vertical, because the favourable influences of gravitation on the circulation is removed. Although tension is increased, dicrotism is favoured, because the horizontal position, in removing the effect of gravitation, permits ascending reflux of the wave. 2d, Influence of compression of large arteries on arterial tension and the form of the pulse: The author compressed his two femoral arteries, and observed that the tension in his radial was considerably augmented. 3d, Influence of temperature was ascertained by remaining for some hours in a very hot room: The sphygmographion showed diminished tension; under opposite circumstances, in a cold room and by ablutions with water at zero, the tension was remarkably increased, but very speedily fell. 4th, Influence of respiratory movements on arterial tension and form of pulse: In a violent expiration the thoracic and abdominal arteries are compressed, and the tension of the arteries in the limbs is increased. On ceasing the effort, a sudden reflux of blood into the aorta reduces the tension with a shock. The effect of a strong inspiratory movement Marey found less pronounced; but the facts observed were the inverse of the preceding—a low tension, with a marked tendency to dicrotism. In healthy subjects the ordinary breathing produced no marked influence on the radial artery. 5th, Influence of muscular contraction on arterial tension was ascertained by strongly contracting the limbs during the application of the instrument to the radial. The heart's action was accelerated as well as increased in force. But the increase of tension may also depend on the compression of the arteries in the limbs. 6th, Influence of gymnastics, etc., is to diminish the tension; of repose, to increase it. The difference depends on the opposite conditions of the capillary vessels. 7th, The effect of digestion is to quicken the pulse and to lower its tension. *The frequency of the pulse is great, other things equal, in proportion to the feebleness of its tension.*

The circumstances which operate on the frequency of the heart's action are,—1st, the influences which act on the nervous system of the heart, or on the muscular activity of the organ; 2d, the conditions which modify the resistance which the heart has to overcome in accomplishing its ventricular systole. The latter has been but little considered, and, on examination, the author finds that the general dynamic law, *for a given force, the rapidity of movement produced is in inverse ratio to the resistance offered;* in other words, things being equal in regard to the innervation and the force of the heart, *the frequency of its pulsations is in inverse ratio to the arterial tension.*

Copious bleedings and hæmorrhages reduce arterial tension, and, in consequence thereof, produce increased frequency of heart's action. The more vertical the position of the body, the lower is the arterial tension. Accordingly we find the pulse to vary, and to give when standing 79, when seated 70, when lying 67 pulsations in a minute (Guy). When the arms are raised the arterial tension is enfeebled, and the pulse becomes quicker. When both femoral arteries were compressed, the tension of the pulse was raised and its pulsations diminished; when the compression was removed the tension fell, but the frequency increased. Heat diminishes tension, but increases frequency. Experimenters who have been able to remain in a dry hot chamber at 115°, have observed the pulse to give upwards of 200 pulsations per minute. For the same reason the pulse is quicker in summer than in winter, in warm climates than in cold. Cold contracts the capillaries, increases thus the tension, and diminishes the frequency of the pulse. All these rules admit of pathological application, and also of therapeutical. Medicines which contract the capillaries produce diminished frequency of pulse with increased tension, *e.g.*, tartrate of antimony, colchicum, etc.; those which relax the capillaries give rise to diminished tension and increased frequency, *e.g.*, alcohol and the diffusible stimulants.—*Journal de Physiologie.*

### RESEARCHES ON SOME PECULIARITIES IN THE STRUCTURE OF THE CAPILLARIES OF THE BRAIN. BY C. ROBIN.

M. Robin classifies the capillary blood-vessels under three varieties: 1st, capillaries from 700th to 300th of a millimetre in size, consisting of a single tunic, homogeneous, with ovoid nuclei, the long axis parallel to that of vessel. 2d, Capillaries from 300th to 700th of a millimetre in size, consisting of two coats,—one continuous and identical with that of the first variety, the other consisting of fibre-cells with nuclei, whose long axis is transverse to that of the vessel. 3d, Capillaries from 600th to 1500th of a millimetre in size, presenting the coats of the second variety, and a third external coat formed of fibrils of areolar tissue, running longitudinally, parallel and undulating. This variety of vessel is visible to the naked eye.

Robin has made a particular study of the fibre-cells of the second variety, and of these he gives a most minute description. He also describes a structure never before noticed by histologists. Around a certain number of the capillaries of the brain, spinal cord, and pia mater, is a delicate adventitious tunic or envelope, consisting of a homogeneous or slightly striated substance. This envelope may be found surrounding all the three varieties of vessels described. The space between this sheath and the wall of the capillary contains a colourless liquid and a number of spherical free nuclei, which vary much in quantity at different points. In subjects beyond 40 or 45 years of age, masses of fat granules are always found in this space. Very large grains of amorphous hæmatosine are also found amongst the spherical nuclei. Blood globules he has never seen, and he supposes the hæmatosine to be an exudation from the capillary walls, in the substance of which it may sometimes be observed. This peculiar envelope Robin has observed in the vessels of the white and grey substance only; it does not exist in all vessels, but is in general not difficult to find. The structure is most minutely described, but no hypothesis as to its use or as to the function of the nuclei is offered.—*Journal de Physiologie.*

### ON THE BLOOD-CORPUSCLE QUESTION. BY G. ZIMMERMANN.

The author asserts that his views as to the origin of blood-cells have been erroneously stated in a recent work on Pathology, and in this communication he again states his opinion, matured by twelve years' further observation. His hypothesis is, that the coloured blood corpuscles in the adult animal do not originate in colourless nucleated blood-cells, but in the small cells in the lymph, which he has named elementary corpuscles (Elementarkörperchen). These elementary corpuscles are to be found in the blood of all animals, but they may be best studied in the blood of the bird when mixed with a solution of Epsom salt. When time has been allowed for the coloured corpuscles to sink, one may find in the clear superimposed plasma (*a*) the elementary corpuscles. These are nearly $\frac{1}{500}$ of a line in size, and glistening, are not changed by adding water or acetic acid, are made smaller by hydrochloric acid, contain no nuclei, and are quite colourless. Their number is very great, and they may be seen in transition forms measuring $\frac{1}{400}$ of a line, and presenting, on adding acetic acid, the appearance of a nucleus, although they are yet quite colourless; (*b*) from these cells transition forms passing into the young coloured cells may be observed, as oval pale yellow bodies, with a faintly marked nucleus, but well marked on adding acetic acid. Between these and the full developed cells transitional forms are seen. In the bird colourless cells are few in number, and are easily distinguished from any of the developing coloured cells.

As to the origin of the coloured cells, the author says it takes place in the lymphatic vessels, as does that of the colourless cells. The elementary corpuscles in lymph and chyle have been described by the older writers, Leuwenhoek, Hewson, and R. Wagner, and also by H. Müller. It is only from faulty methods of research that they have been confounded with the elementary granules of the chyle and lymph. The exact mode of origin is still unascertained; but it appears as if molecules, or very small granules, were first formed in the substance of the gland, which develop into true lymph corpuscles and into the various stages of blood-cells. The author maintains that the formation of coloured cells from or through colourless cells is extremely improbable, and that his own theory of *gradual* development is more consistent with facts. In the blood of a phthisical person he found a great number of cells of the size of the red corpuscles, but quite colourless, and bi-concave in form. He supposes that these elementary corpuscles are not in conditions favourable to their conversion into red corpuscles. He doubts not that further pathological research would confirm his hypothesis. These elementary cells gradually imbibe from the plasma the chemical essentials, such as iron, fat, etc., and in the lungs oxygen, the chemical effects of which may, out of the fat and albumen, constitute hæmatin. The author suggests the possibility of these elementary corpuscles penetrating the system of canals present in connective tissue, which form a capillary system for the distribution of plasma to the ultimate elements of the tissue. He also refers to the pathological observations of his on the cornea, and suggests that the anastomosing processes of the cells are become distended by the entrance and accumulation of his elementary corpuscles. Another step would lead to the idea of these dilated processes becoming converted into new capillary blood-vessels.—*Archiv. für Pathologische Anatomie.*

### ON THE PHYSIOLOGY OF THE VALVES OF THE HEART. BY LUDWIG JOSEPH.

In a previous paper[1] the author gave a minute anatomical account of the valves of the heart, describing particularly the muscular nature of the various valves, which was discovered by Kürschner in 1840. Joseph observed in the venous valves muscular elements which proceed from the innermost muscular layer of the auricle, and extend into the valves for a third of their length, in the form of tongue-shaped expansions. This being the case, it is clear that the contraction of the auricles must also influence the position of the auriculo-ventricular valves; and since the contraction of the auricles begins at the entrance of the great venous trunks, the auriculo-ventricular valves participate in the auricular systole towards its termination. The effect of the contraction of the fibres in these valves is to draw them up like a curtain against the ostium venosum, so as to form around the ostia a low, firm, ring-shaped wall. The auriculo-ventricular orifices are at the same time somewhat enlarged by this contraction; and by facilitating thus the entrance of the blood into the ventricle, its chamber is more easily and completely filled. The action of these valvular fibres may be studied in the quite fresh heart of any animal, by applying to the interior of the auricle an induction current. The fibres of the heart are attached to the arterial rings in the great vessels, the aorta and pulmonary artery, whilst by the other ends they terminate in the cordæ tendineæ. Contraction takes place at both ends, and meets in the middle of the fibres. By the contraction of the musculi papillares in the centre of the auriculo-ventricular orifice, the points and edges of the valves are unrolled, and the occlusion is perfected. The pressure of the blood assists also to unfold and to stretch the valves. They form a somewhat convex floor to the auricles, and are prevented turning upwards by the influx of venous blood, and also by the cordæ tendineæ. The semilunar valves are much simpler. At the beginning of systole the valves are as far as possible removed from the sinuses of Valsalva; they are then separated by the ventricular contraction, and this is more easily accomplished than at first sight would appear, for the contraction of the arteries is already over. The valves are not pressed quite close against the arterial walls, as many seem to think, and blood therefore remains constantly between the valve and the arterial wall. It is this blood behind the valves which closes them, and not a returning wave. Of this the author has convinced himself by experiment.—*Archiv. für Path. Anatomie.*

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[1] *Virchow's Archiv.* Bd. xiv. p. 263.

### CONSIDERATIONS ON THE ACTION OF THE AURICULO-VENTRICULAR VALVES AND THE BRUITS OF THE HEART. BY DR MALHERBE.

At the close of his paper the author gives the following summary of his conclusions:—

1st, The action of the auriculo-ventricular valves essentially differs from that of the sigmoid valves, and can in no respect be compared to them.

2d, The occlusion of the auriculo-ventricular valves takes place by a sort of puckering (*froncement*), in which one cannot find the conditions necessary for the production of a bruit.

3d, The first sound is not due to a valvular clapping (*claquement*); it results from the shock of the blood against the walls of the ventricle, under the influence of the auricular contraction.

4th, The shock of the heart against the thoracic walls is the consequence of this same contraction, which augments the volume of the ventricles in distending them, and imparts to them a forward movement.

5th, Certain vivisections have shown that the ventricles, after their active contraction, remain in a state of tonic contraction. It is probably so in the human subject.

6th, The second sound seems to depend on several causes, of which the principal are the percussion on the distended sigmoid valves of the column of blood contained in the arteries at the moment of arterial systole, and the sudden entrance of the blood of the veins into the auricles at the moment of auricular diastole.—*Journal de Physiologie.*

### ON VASCULAR MURMURS, AND ON THE ACTION OF THE AURICULO-VENTRICULAR VALVES. BY M. A. CHAUVEAU.

In the paper which we have reported above, M. Marey accounts entirely for the production of bruits de souffle in modifications of tension. In this note Chauveau begs to warn physicians against too hurriedly accepting this doctrine, and asserts in the most categorical manner that modifications of tension do not act directly in the production of arterial bruits, but only by modifying the *velocity* of the current, an element which M. Marey has omitted in his consideration of the subject.

In reference to the conclusions of Malherbe (above given), M. Chauveau protests against the assertion "that the occlusion of the auriculo-ventricular orifice is effected by a species of puckering in which one cannot find the conditions necessary for the production of a bruit." M. Chauveau has made the following observations:—

1st, That the systole of the auricles has a very appreciable duration, and that it is always sharply distinguishable from the systole of the ventricles.

2d, That this auricular systole is entirely aphonic.

3d, That the first sound succeeds the auricular systole, and coincides exactly with the ventricular systole.

4th, That the shock of the heart, isochronous with the first sound, also succeeds the auricular systole, and coincides with the ventricular systole.

5th, That the shock imparted to the valves of the heart by their sudden tension is strong enough to be perceived by tactile exploration on the exterior of the organ, as well around the auriculo-ventricular orifices as around the arterial orifices.

6th, That the shock, and the bruit by which it is made perceptible to the ear, entirely ceases if by some artifice the tension of the valves is prevented.—*Journal de Physiologie.*

### THE ACTION AND SOUNDS OF THE HEART. BY G. B. HALFORD.

Having administered chloroform, and made arrangements for maintaining artificial respiration, Dr Halford made the following observations on the hearts of dogs and asses :—

1st, When the heart is thus exposed (by removal of anterior wall of thorax), the movement of the whole viscus, and alternately of its separate parts, can be studied through the more or less transparent pericardium. The artificial respiration being properly and systematically kept up, the facility and smoothness of the heart's action strike the observer, any impulse or beat of the heart not entering into the mind. The point of the finger coming in contact with the ventricles immediately dispels the deception, and the *apparent* blow is distinctly felt. A stethoscope lightly applied is raised against the ear, and the first and second sounds are distinctly heard.

2d, When the pericardium is removed, and its contained fluid consequently lost, the heart's action becomes immediately tumultuous, the contractions appear more forcible, and the sounds are much louder ; and this is the character, more or less intense, of its action ever after. The pericardium therefore regulates the heart's movements.

3d, The first sound occurs during the contraction of the ventricles, and the second immediately follows it ; that is, whilst the auricles are being filled with blood, and no muscular action is going on.

4th, During the systole or contraction of the ventricles, the base of the heart approaches the apex ; the latter at the same time is pressed downwards, backwards, and from right to left, describing part of a circle ; the ventricles, assuming a contracted globular form, descend, describing also part of a circle, but passing forwards and from right to left. There is also a forward movement of the left ventricle above the apex, from left to right. These minor movements must be seen, they cannot well be described ; but the facts of importance to be remembered are, that when the ventricles contract, their bases descend towards the apex, and the latter is not tilted forwards so as to give any blow to the thoracic walls, but is pressed downwards, its extremity being directed backwards and from right to left.

5th, The ventricles contracting, the auricles simultaneously receive blood, and then occupy part of the space within the pericardium previously taken up by the ventricles in their relaxed, distended state.

6th, With each contraction of the ventricles and descent of their bases, the pericardial portions of the aorta and pulmonary artery becomes suddenly greatly elongated and distended, and as suddenly by their elasticity react upon their contents, becoming of uniform calibre, but visibly distending the sinuses of Valsalva. The venæ cavæ are similarly distended during the contraction of the auricles.

7th, The finger and thumb, spanning the diameter of the ventricles, are perceptibly further separated during the contraction of the ventricles, and approximated during their relaxation.

8th, The same *apparent* blow is felt over every part of the ventricles during their contraction, but most forcibly over the centre. The impulse at the ribs is most probably given by the fibres just above the apex.

9th, The apex is the most fixed part of the heart. Great pains were taken to ascertain this point.

Having made these observations on the external movements of the heart, the author next investigated the functions of the auriculo-ventricular valves, chordæ tendineæ, and musculi papillares. His experiments led him to the following conclusion in reference to the closure of the valves. The auricles contracting on the blood, the force of their contraction is transmitted by the blood in all directions, separating the flaps of the valves, distending the ventricles, and (the semilunar valves being shut down) pressing as much upwards and backwards as downwards and onwards. The force, not being sufficient to raise the semilunar valves, is expended in distending the ventricles and raising and closing the auriculo-ventricular valves. Let the fact of there being a perfect septum between auricles and ventricle, previous to the contraction of the latter, be taken in connection with the fact of the descent of the bases of the ventricles during their systole, and we arrive at a certain conclusion respecting the functions of the musculi papillares. Seeing, then, that the valve forms a perfect septum as above, these muscles also contract in proportion as the base of the ventricle descends, and their tendons (chordæ tendineæ) being inserted into or connected with the under surface of the flaps of the valve from apices to circumference, maintain the proper tension of the valve till the whole of the blood is expelled from the ventricle. The auriculo-ventricular valve forms a perfect septum between the auricle and the ventricle as soon as the latter becomes distended, and is kept in this position during the whole ventricular systole by its own proper muscles (musculi papillares), which, by contracting simultaneously with the descent of the base of the ventricle, prevent the eversion of the valve into the auricle.

In regard to the sounds of the heart, Dr Halford contends for the tension of the auriculo-ventricular valves being the sole cause of the first. He exposed the heart in large dogs, and on applying a stethoscope, heard the first and second sounds. The superior and inferior venæ cavæ were then compressed with bull-dog forceps, and the pulmonary veins by the finger and thumb; the heart continuing its action, a stethoscope was again applied, and neither first nor second sound was heard. After a short space of time, the veins were allowed to pour their contents into both sides of the heart, and both sounds were instantly reproduced. The author contends that the fact of both sounds being destroyed and reproduced by the same means, is the greatest proof that they depend upon the same cause, which is simply the vibrations of the valves produced by the backward pressure of the blood, first against the auriculo-ventricular (*first sound*), and secondly, against the ventriculo-arterial valves (second sound).

All animals with hearts like our own, give forth similar sounds; but in birds, the auriculo-ventricular valves are but feebly developed, and in these animals the first sound is undistinguishable from the second. In certain birds (ostrich, emeu, apteryx), the valves resemble closely the mammalian type of structure, and in these the sounds are also as like as possible to those heard in the heart of the mammal. Halford closes his essay with critical objections to all other theories, as to the cause of the sounds of the heart.—(*Pamphlet—Churchill.*)

"On the Arrangement of the Muscular Fibres of the Ventricular portion of the Heart of the Mammal." By James Pettigrew.

A full abstract of Mr Pettigrew's paper, from the *Proceedings of the Royal Society*, was given in the December number of the *Edinburgh Medical Journal*, p. 562.

### ON THE CIRCULATION OF BLOOD IN THE LIMBS AND IN THE HEAD OF MAN.

BY J. P. SUCQUET.

In the arm, leg, and head, there is a *derivative* circulation, by which a large amount of blood is returned to the heart, without having undergone any other change than that of colour, and without having taken part in nutrition. The way in which M. Sucquet ascertained the precise course of this circulation, was by injecting the principal arteries with a dark watery fluid, stopping the injection as soon as its return by the large veins took place. He then dissected out the injected vessels, and thus ascertained the route taken by the *derivative* circulation in different parts. In the upper extremity, direct communication between arterial and venous branches takes place on the cutaneous surface of the olecranon, on the points of the thumb and fingers, on the thenar eminence, and on the internal border of the hand. The veins which return the blood, are the cephalic and basilic. In these vessels the circulation greatly varies; during the cold of winter, they do not, for many hours daily, give passage to a single drop of blood. On the other hand, the *nutritive* circulation is constant and regular. In the lower extremity, a modification of the plan is found, in which the superficial veins are not alone the vessels which form the derivative circulation; for Sucquet found that his injection returned more quickly by the crural than by the saphenous vein, a result which analogy would not lead one to expect. Communication between arterial and venous vessels takes place at points corresponding to those mentioned in the upper extremity, viz., around and in front of the patella at the points of the toes, on the outer, and still more, on the inner edge of the foot. On the sole of the foot, under the heads of the metatarsal bones, numerous anastmoses between arteries and veins are found, and the veins resulting from this plexus terminate in the posterior tibial veins: thus explaining the abundant return of the injection through the crural vein, instead of the superficial veins, as in the arm. Pressure on the sole of the foot, and the support afforded by the muscles of the leg, facilitate the return of blood, and obviate the influence of gravitation. These conditions, which are not found in the external veins of the leg, afford sufficient explanation of the reason for the crural vein being chosen to conduct the *derivative* circulation of the inferior extremity.

In the head, as in the limbs, there is a circulation of blood, in the vessels of the organs, which distributes constantly and in a regular manner the elements of nutrition. There is, besides, a circulation which takes place in the ultimate divisions of the facial, ophthalmic, and auricular arteries; these arteries communicate directly with veins; this inconstant circulation has for its object the derivation of the superabundant supply of blood which the arteries of the head may sometimes receive, and its removal by the venous system, especially by the facial vein. The face is the seat of the derivative circulation of the head, as the hand and the foot are the seats of this circulation in the upper and lower limbs.

M. Sucquet, in answer to the question, Why is the blood in the veins of the forearm of a dark venous colour, when it has not undergone the changes due to nutrition? affirms that the jerking (*saccadé*) impulsion of the blood is the condition requisite for the permanence of its arterial colour. All the blood in the body does not serve for its nutrition, or for the various secretions; a great part returns to the heart and lungs, which has not undergone any other than respiratory changes, and this portion of the blood only requires to be impregnated anew with oxygen.—(*Pamphlet—Baillière.*)

# Part Fourth.

# MEDICAL NEWS.

## MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XL., 1860–61. MEETING V.

*Wednesday*, *March* 6, 1861.—BENJAMIN BELL, Esq., President of the Society, in the Chair.

### I. RADICAL CURE OF REDUCIBLE HERNIA.

*Professor Syme* made a communication on this subject, which will be found at page 665 of this number of the *Journal.*

### II. CASE OF FAVUS.

*Dr Laycock* brought before the Society a patient who was suffering from favus. The case was interesting, as the disease was not confined to the scalp, but the general surface of the body was extensively affected. The disease began in the scalp some years ago, and had been treated in various ways. During six months nothing was done, and the affection made great progress, appearing on various parts of the body. The patient, when exhibited to the Society, presented numerous extensive patches of favus over the arms, scapulæ, breast, and abdomen; and Dr Laycock drew attention to the close analogy between his case and one, of which a plate is given in Hebra's *Atlas of Skin Diseases.* Dr Laycock pointed out several little red patches on the arms, which the patient positively stated had been covered with crusts, but from which these had fallen off, and left the skin almost healthy below; from this it would appear that favus may cease spontaneously. An interesting fact in the case was the existence of an excess of white corpuscles in the blood, with enlargement of the inguinal glands; these corpuscles were not large and granular, but were small, like lymph-corpuscles; and Dr Laycock inferred that the case was one rather of leucocytosis than of leukaemia. The patient, it might be remarked, had suffered much from want of food.

### III. EXTENSIVE MENINGITIS, WITH REMARKABLE SYMPTOMS.

*Dr Laycock* showed a brain in which there was a copious effusion of lymph on the surface of the hemispheres. The subject of the observation had been admitted into the clinical wards of the Royal Infirmary on account of pneumonia and bronchitis, and, up to the day before his death, had not presented any cerebal symptoms. On the morning of that day he got up to have his bed made, but fell down in an apoplectic fit; when seen by the house physician, he was in an almost comatose condition, and there was hemiplegia of the right side. At visit, he was found in a state of profound coma, with complete hemiplegia of the right side. When admitted, the patient was recognized to be suffering from heart disease. Owing to the abundance of sibilant and sonorous râles, it was difficult to ascertain the character of the heart's sounds, but a rough murmur was heard at the apex with the systole of the organ, from which it was believed that the mitral valve was diseased. The diagnosis accordingly was, that either hemorrhagic extravasation had taken place into the substance of the brain, or that a vegetation had been washed away from the mitral valve, and become impacted in a large vessel in the brain. On *post-mortem* examination, there was no trace of hemorrhage, or of plugging of the cerebral arteries, only an abundant effusion of soft yellow lymph below the arachnoid, over the surface of the hemispheres. A row of minute vegetations adhered to the mitral valve; but, in addition, there was evidence of pericarditis. The pericardium contained some bloody serum, and its surface was in part coated with tolerably recent lymph, while at other parts, there were firm old adhesions. Dr Laycock considered this case as almost unique; there had been no cognisable delirium and no apparent loss of intelligence previous to the occurrence of coma, and there did not seem to be a sufficient difference in the amount of effusion over the hemispheres, to account for the sudden paralysis of one side of the body.

### IV. AMYLOID DEGENERATION.

*Dr Laycock* showed organs affected with amyloid degeneration. The liver, spleen, and the villi of the intestinal mucous membrane were characteristically affected when touched with solution of iodine. No effect could be observed with the naked eye to be produced on the kidney; but examined microscopially, some of the vessels of the malpighian tufts were seen to be turned of a reddish brown, on the addition of iodine. A point of interest in this case was, that though there were cavities, and what might be called tubercle in the lungs, there were not true strumous tubercles. The matter deposited in the lungs was not yellow tubercle, and the patient had not presented the physiognomy of the strumous diathesis.

### V. WARTY DEGENERATION OF THE VOCAL CHORDS IN A CHILD.

*Dr Matthews Duncan* exhibited a specimen of a rare pathological lesion, observed in a case occurring in the practice of the Hospital for Sick Children. It is in the possession of Dr Warburton Begbie, who saw the patient shortly before death.

When about five and a half years old, the child, a female, had what was considered a severe attack of cold. Thereafter the strength of her voice gradually diminished. When under Dr Duncan's care, about 18 months after the first attack of cold, there was no difficulty in hearing what the child had to say, but its voice was extremely feeble and husky. The breathing was very wheezing when hurried or deep. There was a slight degree of injection and blueness of the face always present, and an extraordinary expression of anxiety. She coughed with a whistling sound, but had no expectoration. She was liable to sudden and violent attacks of dyspnœa. Preparations for tracheotomy were made, but great difficulties were thrown in the way of the operation by the parents of the child. A week before death, her symptoms began to be much aggravated by an attack of bronchitis, and the fatal event occurred suddenly in one of the ordinary attacks of dyspnœa.

On the autopsy, the site of the glottis was found occupied by a warty mass, having some papilliform projections, and especially on the left side a distinct polypus. The chink of the glottis was blocked up by tenacious mucus, and was itself extremely small, being a narrow fissure not exceeding two lines in length. The warty mass seemed to spring from the vocal chords, and to have grown upwards in flap-like projections, having no connection with the adjacent sides of the larynx. Under the microscope, nothing but large, flat, nucleated cells could be observed in the diseased parts.

### VI. LARGE UTERINE POLYPUS.

*Dr Matthews Duncan* exhibited a uterine polypus of very large dimensions, which he had recently removed from an unmarried woman, aged 47 years. It measured 5½ inches in length by 4½ in breadth, and was of the ordinary fibrous structure. It was, as he had pointed out in former specimens, quite destitute of muscular or mucous coverings,—being, in fact, an enucleated fibrous tumour which had been expelled from the uterine wall, its original seat, into the vagina, from which it was removed by operative interference. In this case, it was remarkable, that during all this growth, enucleation, and change of situation, the woman's health had been scarcely disturbed in the least degree. She had irregular vaginal discharges; but as she had no suffering, she paid little attention to them. Indeed, it was not until the supervention of a cough, which forced the tumour down upon the outlet of the pelvis, and compressed the urethra, giving rise to retention of urine, that she had any complaint to make of suffering in the hypogastric regions.

It is a mistake to suppose that the difficulty of dealing with these large polypi lies in dividing the pedicle. In the present case, the pedicle could not be reached by the finger, until the tumour was removed from the vagina by traction. This was a very laborious process, effected only by repeated and persevering efforts, assisted by the bearing down of the patient. It was, indeed, a difficult labour in a primipara; only, instead of a child's head, a relaxed vagina, and labour pains, there were a fibrous tumour, an undilatable vagina, and traction by hooks fixed in the tumour. There was no difficulty in dividing the pedicle; for it snapped across as the tumour descended, and scarcely a drop of blood issued from it. If the pedicle had not broken, it would have made little difference in the operation; for the extent to which the easily moveable uterus is dragged down in such a case, is not considerable.

### VII. INJURIES FOR WHICH PRIMARY AMPUTATION HAD BEEN REQUIRED.

*Mr Spence* showed preparations from two cases in which amputation had been required on account of injuries, and which presented a marked contrast as to the apparent necessity for this mode of treatment. In the first case, a railway carriage had passed over the patient; the soft parts of the leg were much injured, and there was a splitting of the tibia, which involved the knee-joint. The other limb had been cut off by the carriage-wheel at the same time. The patient had lain for a considerable time, and had lost a good deal of blood. In this case there was no doubt as to the treatment required; both thighs were immediately amputated.

The other case differed from the preceding in regard to the apparent necessity of primary amputation. An old woman jumping from a chair, fell to the ground, and sustained a compound fracture and dislocation of the ankle-joint. She replaced the bones herself to a certain extent, and was seen by a medical man, who replaced them still further. When seen by Mr Spence, the case at first seemed a simple one, so far as the appearance of the limb was concerned. On examination, there was found to be a compound fracture and dislocation of the ankle-joint, and a fracture of the fibula higher up. In this case Mr Spence had no doubt as to the propriety of amputation; for he had never seen a case of the kind recover when the subject of it was above middle age. Mr Spence had seen a young person recover without amputation; but even then, the cure was not satisfactory.

*Mr Syme* could quite confirm the propriety of Mr Spence's practice in the second of the above cases. He had once investigated the subject, and had found that, out of fourteen cases of compound dislocation of the ankle-joint treated in the Royal Infirmary, it was doubtful if even one had recovered without amputation.

### VIII. CLOT FROM THE CRANIUM OF AN INSANE PERSON.

*Dr Sibbald* (Royal Edinburgh Asylum) exhibited a temporal bone where the petrous portion had become carious, the superior parietes of the internal ear having become destroyed, and free communication established with the interior of the cranium. This disease had occurred in a patient in Morningside Asylum, a woman aged 65, who had been admitted on account of a sudden attack of dementia, accompanied with slight hemiplegia. The paralysis gradually became complete, and the mental condition did not improve. She died after having been nearly five months insane. On *post-mortem* examination, a large softened clot was found separating the greater part of the temporal bone of the right side from its covering of dura mater, and compressing the corresponding middle lobe of the brain. In the heart, the aortic valves were found ossified, and both kidneys were fatty. The other organs were healthy.

### IX. DEPOSIT OF NITRATE OF SILVER IN THE SKIN AND GLANDS.

*Dr Sibbald* also exhibited, under the microscope, sections taken from different organs in a man, who had eight years since taken nitrate of silver in solution during 18 months, for the cure of epilepsy. At the end of that time the skin began to assume the slaty hue frequently produced by this treatment. On examination of the tissues after death, black pigment was found extensively deposited in the meshes of the corium, in the connective tissue of the liver, in the lymphatic glands, and about the choroid plexus. It was also found more sparingly in the spleen, the kidneys, and the cartilages. Portions of the liver, the choroid plexus, and the costal cartilage were exhibited, showing the deposit.

### X. COMPOUND DISLOCATION OF ANKLE.

*Dr Watson* showed a cast of the leg and foot of a patient æt. 50, who, three years ago, when abroad, sustained a compound dislocation of the ankle-joint. The surgeons in charge had reduced the protruding ends of the bones, and, by diligently making openings for the evacuation of pus which formed in the textures of the leg and foot, and removing several portions of dead bone, complete consolidation of the joint and cicatrization had ultimately taken place. Unfortunately, however, this was accompanied by a considerable amount of lateral deformity of the ankle-joint, and with secondary muscular contraction and atrophy, giving rise to all the characteristic appearances of talipes equino-varus. Dr Watson had been asked to see the case, as amputation was thought to be preferable to such a useless member. By treating the case, however, as one of equino-varus, dividing the *tibales anticus* and *posticus*, the *tendo Achtllis*, the *flexor longus pollicis*, and the plantar fascia, Dr W. found that the posterior part of the foot and the drawing upwards of the calcaneum could by forcible means be brought into the same plane, and thus occupy a position suitable for progression. By means of a suitable apparatus this was gradually effected; and although the ankle is still a little turned outwards, so that the heel inclines slightly inwards, the patient can walk about and bear her weight upon the sole of the foot. The case, besides its intrinsic merits, had additional interest as forming an exception to the results spoken of by Mr Spence and Mr Syme as usually attending upon such accidents in adults; for here recovery had taken place in a patient upwards of 50, without having recourse to amputation. Perhaps the tedious progress of this case, and the partial deformity which still remained, might seem rather to indicate the propriety of resorting to amputation, than of attempting to save the limb by effecting reduction of the displaced bones; and if such was the only alternative, certainly Dr W. would be inclined to coincide in that view; but Dr W. thought that a safer and better plan in such cases was to remove the articulating surfaces of the extremity of the tibia and fibula, and any broken and detached fragments of bone, and having thus relieved the parts from all risk of tension, to treat the case as one of compound fracture. In this way a foot both seemly and useful in progression, requiring only a high-soled boot, could be obtained.

### XI. FATAL CASE OF CROUP IN AN ADULT.

*Dr Warburton Begbie* read an account of a fatal case of croup in an adult, which will be found at page 890 of the present number of the *Journal.*

*Professor Syme* would mention a case, which the modesty of his late excellent house surgeon, Dr Joseph Bell, prevented himself from recording. A child, seven months and a half old, was brought to the Royal Infirmary labouring under the symptoms of croup, and seemed about to die very shortly. Dr Bell proposed to operate; Mr Syme thought that tracheotomy would do no good, but gave his full sanction to the performance of the operation. Accordingly the operation was performed, and, strange to say, not only was the child immediately relieved, but it recovered perfectly. Mr Syme believed this to be the earliest case of tracheotomy on record.

*Mr Spence* said, that the case narrated by Mr Syme was the earliest with which he was acquainted Undoubtedly there was a very small chance of success, and the operation was not likely to succeed in similar cases.

*Professor Miller* said, that his only contribution to the subject of croup in the adult, would be the mention of a circumstance which had occurred many years ago. At that time he was Mr Liston's assistant, and a small collection of anatomical specimens was exposed for sale. Among much trash, there was a very fine specimen of croup in the adult—a perfect tubular membrane extended from the larynx to the bifurcation of the trachea. The competition for this specimen was very keen, and Mr Miller secured it for Mr Liston at the price of eight pounds. The specimen was now in the Museum of the London College of Surgeons. No history was attached to it.

### XII. CASE OF ENCEPHALOCELE.

*Dr Matthews Duncan* read a case of encephalocele, which will be found at page 900 of this number of the *Journal.*

## THE IMPERIAL ACADEMY OF MEDICINE.

M. Claude Bernard has been elected to the vacant seat in the section of Anatomy and Physiology in the Imperial Academy of Medicine. It might have been supposed that so distinguished a physiologist would long ago have been elected a member of this learned body; but he required to enter by the section of Physiology, in which no vacancy has occurred since 1847, until that occasioned by the recent death of M. Dumeril. In addition to M. Bernard, the candidates were—MM. Sappey, Béclard, Verneuil, and Beraud. The Academy elected M. Claude Bernard by 72 out of 79 votes.

## ROYAL COLLEGE OF SURGEONS—CONVERSAZIONE.

The second of the series of Conversaziones to be given by the Royal College of Surgeons during the present season, was held in the Surgeons' Hall, on Friday the 1st of March, when Dr Skae, of the Royal Edinburgh Asylum, delivered a lecture on insanity in its legal relations. The company was received by the president, Dr Douglas Maclagan, and included a large number of gentlemen of the legal and medical professions. Among those present were—Lord Cowan; Professor Christison; Sheriffs Montgomerie Bell, Davidson, Cleghorn; Messrs G. Patten, N. C. Campbell, Burn Murdoch, A. Young, Forbes Irvine, and J. C. Smith, advocates; Messrs J. R. Stoddart, Joseph Grant, J. Gibson, C. Douglas, A. Stevenson, J. W. Mackenzie, J. Turnbull, D. Scott Moncrieff, J. Patten, and A. Scott, W.S.; Messrs J. Webster, T. Landale, T. Leburn, and J. Ross, S.S.C.; Rev. Dr Alexander; Rev. E. Antrobus; Mr Gillespie of Mountquhanie; Mr Mein, of Marsh House, Canonbie; Dr Jamieson, Aberdeen; Dr Rorie, Dundee; Dr M'Kinlay, Paisley; Dr Alexander, Wooler; Mr A. Wood, H.M.I.S.; Dr Ivor Murray; Dr Playfair, H.M.I.S.; Baillie Blackadder, etc., etc. On the motion of Lord Cowan, seconded by Professor Christison, a cordial vote of thanks was given to Dr Skae for his able discourse, and the wish was expressed that he would follow up the concluding portion of his subject on some future occasion.

## OBITUARY.

### THE LATE DR ADAMS OF BANCHORY.

We deeply regret to announce the death of this most learned physician and amiable man. The sad event occurred at his own residence, in Banchory Ternan, Aberdeenshire, on the 26th of February, and was caused by an attack of capillary bronchitis. Respected and beloved by all classes in the immediate sphere of his professional usefulness, Dr Adams throughout life discharged the duties of a country surgeon; as such, he was ever at his post, and quite as ready for and as enthusiastic in his calling, as if he had not in addition, amassed and skilfully used that body of sound and extensive learning which has made his name familar to scholars everywhere, and to all who are capable of appreciating the natural gifts, especially the indomitable perseverance which so remarkably characterized him. It cannot fail to be matter of astonishment, that while engaged in the most laborious of occupations, Dr Adams should have become, at a comparatively early age, distinguished as a great scholar, possessing, more particularly, a most accurate and extended acquaintance with the language and literature of Greece; but, in advancing years as in early youth, every difficulty in the way of his keen and insatiable desire for knowledge was somehow or other effectually overcome. Dr Adams' contributions to literature have been numerous. His "Magna Opera," those by which he will be long known and highly esteemed, are his translations of "Paulus Ægineta," and of "Hippocrates." The former of these is now familiar to the profession as forming three of the earlier volumes of the original Sydenham Society's publications in 1845 and two following years; but many years before that issue, namely, in 1834, a first volume of the translation had appeared. Its commercial success was, however, not such as to tempt the publication of a second. Neither this work, nor the "Hippocrates," nor the "Aretæus," of Dr Adams, are mere translations (in that point of view indeed, there is the highest possible opinion in favour of their elegance and completeness); for, in a manner the most remarkable, the erudition of the editor is revealed in the form of divers observations and notes, some classical, others antiquarian, very many strictly professional, so that not so much as a single dull page will be found in the entire length of these volumes. Dr Adams' intimate acquaintance with the history and literature of the medical profession, ancient, mediæval, and modern, has everywhere been made subservient, and that in the most interesting as well as instructive manner, to the requirements of the reader. It is a matter of regret, that in our own country, comparatively little has been done for the cultivation of ancient medical literature; very nobly, however, has Dr Adams of late redeemed Scotland, as Dr Greenhill has England, from the charge of barrenness in this field; in upholding the credit of British scholarship and learning, the names of these physicians may be classed with those of Littré and Daremberg in France, De Renzi in Italy, Ermerins among the Dutch, Hecker and Choulant among the Germans.

Dr Adams' professional or other distinctions were not numerous. His qualification to practice was obtained from the College of Surgeons of England in 1815; in 1847 the University of Glasgow conferred upon him the honorary degree of LL.D.; in 1856, the University of Aberdeen that of M.D. He was also a corresponding member of the Medico-Chirurgical Society of Edinburgh. Though, seeking his chief happiness when relieved from the active duties of his profession, in his well furnished study or in the society of his warmly attached family, Dr Adams had secured the friendship of many distinguished men of science and letters, with several of whom a close correspondence was maintained—the late Sir William Hamilton, Lord Ravensworth, Dr Simpson, Professor Blackie, and others similarly esteemed were among the number. Not very rarely he left his home on Deeside and came among his friends in Edinburgh, "cum hirundine prima" being almost invariably the season of his brief holiday. How thoroughly he enjoyed the period of relaxation which he then allowed himself, many among us who mourn his death, will now with feelings of a mixed nature remember; how edified and delighted with his sage discourse we were will not readily be forgotten, whether that concerned his favourite subject, the ancient heroes of medicine, or a great modern hero, the first Napoleon, with whose life, in all its particulars, but especially his battles, he was singularly familiar—or Horace, or Virgil, or Homer, Milton, Shakespeare, or our own Burns, whom he greatly admired, and to whom, as will be remembered by not a few, on the occasion of the centenary celebration of the poet's birth, he did fullest justice, in a speech which demonstrated his possession of the gift of eloquence.

Now he is gone, it is pleasing to know that he loved Edinburgh, and dearly loved many Edinburgh friends. Of his last visit to Edinburgh, he writes to one of these, "I look back on the few days lately spent in Edinburgh as among the happiest of my life."

Shortly before his death, Dr Adams was planning the collection and publication of many short and detached papers of his, which had appeared in different periodicals, and at various times, within the last twenty years; a wish indeed of this kind had been present to his mind for a considerable period, the execution being deferred from the operation, as he was wont to alledge, of the inaction incidental to advancing years.

"———— sed enim gelidus tardante senecta
Sanguis hebet, frigentque effætæ in corpore vires."

We may be permitted to express the hope that the design which he had intended, may yet, by some friendly hand, be accomplished. Many of the papers in question are of a most valuable description; and their appearance in a connected form would, we feel assured, be hailed with pleasure by the profession.

Dr Adams died in his sixty-fourth year; he had lost his wife some years ago, but is survived by several children. One son is the accomplished Surgeon of the 1st Battalion of the Queen's 22d Regiment, with which he served many years in India. When stationed in different parts of Hindostan, Dr Leith Adams made a most instructive ornithological collection, which, as a gift, was presented to his native Banchory; while, in its arrangement, his late distinguished and lamented father took the greatest interest, and lent the most valuable assistance.

### THE LATE PROFESSOR ARAN OF PARIS.

The medical profession in Paris has sustained a loss as cruel as unexpected by the death of Dr Aran, Professor Agrégé in the Faculty of Medicine, and Physician to the Hospital St Antoine, who was cut off at the age of forty-four years, by an attack of cerebral rheumatism.

Dr Aran was entirely indebted to his own exertions for the elevated position in his profession which he had attained. He commenced his medical studies at Bordeaux, and terminated them in Paris in the most brilliant manner. Gifted with an indefatigable ardour and a rare perseverance, animated by a laudable and healthy ambition, he took part in several *concours;* and with no other support than his knowledge, with no other patronage than his eminent qualifications, he gained the position of Physician to the hospitals of Paris, and of Professor Agrégé at the Faculty of Medicine. In this latter capacity he supplied the place of Professor Rostan at the Hôtel-Dieu during the past winter, and showed himself fully equal to the task.

As Physician to the Hospital St Antoine, Dr Aran was in the habit of going on foot to that institution at six o'clock in the morning, where he made most careful visits; he saw everything for himself, established his diagnosis, watched the action of his remedies, dictated the cases of the patients, trained his students in the difficult art of observation, and terminated his hard morning's work by a clinical lecture, which was attended by numerous foreign physicians, as well as by students and young practitioners. Dr Aran had published several valuable works, and at the time of his death was engaged in the composition of an elaborate treatise on therapeutics.—*Journal de Médecine et de Chirurgie Pratiques*, March 1861.

## VARIETY.

THE CLIMATE OF NICE.—M. Chatin read before the Academy of Medicine of Paris, a report founded on a paper of M. Macario, treating of the climate of Nice, and of its value as a winter residence. It appears that, during winter, the thermometer rarely descends at Nice below the freezing-point, whilst in summer it does not rise above 82°. The mean temperature in autumn and spring is from 62° to 63°; that of the summer, from 71° to 72°; that of the winter, 49°. The periodic return of warm from cold weather takes place regularly, without violent transitions,—the thermometric variations between one month and another being about four degrees and a half. The atmospheric pressure, as in intertropical countries, varies very little from year to year. At

Nice the atmosphere is constantly renewed by currents which blow successively from all points of the horizon. After showing that the direction of the winds and their respective predominance are highly favourable to the salubrity of Nice, the author endeavours to prove the utility of its climate, and especially of its marine atmosphere, in cases of chronic phthisis. In support of this opinion, M. Macario establishes the fact that tubercular disease is rarer at Nice than in the rest of France, or in England, and that the rare cases of phthisis observed amongst its inhabitants are connected with causes which are independent of its climate. He also observes that the favourable influence of the climate of Nice is limited to removing the predisposition to, and conquering the first symptoms of, phthisis. The north-east is the most frequent wind at Nice. Rainy days are rare. In ordinary years there are not more than sixty wet days, of which thirty occur in the autumn quarter. The winter season at Nice is characterized by catarrhal and diphtheritic affections; the spring by eruptive fevers; the summer by gastric and intestinal derangements, bilious fevers, hepatitis, ophthalmia; the autumn by inflammation of the intestines, and intermittent fevers. According to M. Macario, the influence of the climate of Nice is principally exerted upon the skin, of which the functions are remarkably augmented. The author insists upon the difference which exists between the different parts of Nice in a hygienic point of view, and upon the necessity of making a judicious selection in particular cases: it is not in the town, properly so called, that patients should establish their residence, but at Cimiès, those unequalled slopes whither ancient Rome sent her convalescents.

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## PUBLICATIONS RECEIVED.

Anderson—Ten Lectures introductory to the Study of Fever. By Andrew Anderson, M.D. London, 1861.

Brown-Séquard—Course of Lectures on the Physiology and Pathology of the Nervous System. By E. Brown-Séquard, M.D., etc., etc. Philadelphia, 1860.

Caillault—A Practical Treatise on Diseases of the Skin in Children; from the French of Caillault. With Notes by R. H. Blake, M.R.C.S. Lond. London, 1861.

Gairdner—Clinical and Pathological Notes on Pericarditis. By W. T. Gairdner, M.D., etc., etc. Edinburgh, 1861.

Galloway—A Manual of Qualitative Analysis. Third Edition. By Robert Galloway, F.R.C.S., etc., etc. London, 1861.

Hammond—On Uræmic Intoxication. By Wm. Hammond, M.D., etc., etc. Philadelphia, 1861.

Viand-Grand-Marais—Etudes Medicales sur les Serpents de la Vendee et de la Loir-Inférieure par le Docteur A. Viand-Grand-Marais. Nantes, 1860.

Wilson—The Anatomist's Vade-Mecum; a System of Human Anatomy. *Eighth Edition.* By Erasmus Wilson, F.R.S. London, 1861.

## PERIODICALS RECEIVED.

American Medical Times—December 8, 15, 22, and 29; January 5, 12, 19, and 26; February 2 and 9; and March 2. New York, 1860–1.

Australian Medical Journal—January. Melbourne, 1861.

Boston Medical and Surgical Journal—February 7, 14, 21, and 28. Boston, 1861.

British American Journal—February. Montreal, 1861.

Bulletin Général de Thérapeutique—Feb. 28. Paris, 1861.

Dental Review—March. London, 1861.

Dublin Hospital Gazette—March 1. Dublin, 1861.

Dublin Medical Press—February 27; March 6, 13, and 20. Dublin, 1861.

Gazette des Hôpitaux—February 23, 26, and 28; March 2, 5, 7, 9, 12, 14, and 16. Paris, 1861.

Gazette Hebdomadaire de Médicine et de Chirurgie—March 1, 8, and 15. Paris, 1861.

Gazette Médicale de Paris—February 23; March 2, 9, and 16. Paris, 1861.

Henke's Zeitschrift für die Staatarzneikunde, Part 4 for 1860. Erlangen, 1860.

Journal de la Physiologie de l'homme et des Animaux. Numéro XIII.—January. Paris, 1861.

Journal de Medicine et de Chirurgie Pratiques—March. Paris, 1861.

Journal of the Royal Agricultural Society of England—Part II., Vol. 21. London, 1861.

Medical and Surgical Reporter—January 19 and 26; February, 2, 9, 16, and 23. Philadelphia, 1861.

Revue de Thérapeutique Médico-Chirurgicale—March 1 and 15. Paris, 1861.

Wurzburger Medicinische Zeitschrift—Parts V. and VI., Vol. 1. Wurzburg, 1860.

Wurzburger Naturwissenschaftliche Zeitschrift—Parts III. and IV., Vol. 1. Wurzburg, 1860.

# Part First.

## ORIGINAL COMMUNICATIONS.

### ARTICLE I.—*On the Use of Alcoholic Stimulants in Hospital Medical Practice; with Illustrations from the Records of the Royal Infirmary of Edinburgh.* By W. T. GAIRDNER, M.D., Physician to the Royal Infirmary of Edinburgh.

(*Read to the Medico-Chirurgical Society of Edinburgh*, *April* 3, 1861.)

HAVING now for some years acted as one of the ordinary physicians of the Royal Infirmary of Edinburgh, with a full complement of wards for males and females, for fever and for general cases, it occurred to me quite recently, in consequence of the discussions that have taken place as to the treatment of acute disease by stimulants, that it would be of some public advantage were every hospital physician to attempt to arrive at an idea of the general average of stimulants employed by himself in his public practice; keeping in view, at the same time, the character of the cases treated, and the circumstances that have guided him in the employment of these remedial agents. It can hardly be doubted, I think, after what has been already published upon this subject, that the differences between individuals would be very great; so great, indeed, as to reveal real differences of opinion and principle of no small importance. It is probable, therefore, that, from the careful study of these differences, and the calm and scientific discussion of them, some considerable benefit might accrue to general medical practice. I was glad, accordingly, to find, after inquiry, that the books of the Royal Infirmary—carefully kept, from week to week, by the Superintendent, with a view to regulate the consumption of alcoholic liquors—present unimpeachable data on which to base the present investigation. For a series of years the allowance of wines, spirits, and malt liquors—*i.e.*, ale and porter (exclusive of table beer)—in every ward in the house, and the average population of the ward, have been duly registered in a manner that precludes error, within reasonable limits, as to the consumption of alcoholic liquors.

Of course there is a chance of error to a limited extent. The regulations of the house may have been evaded, and spirits or wine may have been surreptitiously brought in by patients and their friends, or by the officers of the house, in some instances; or, in a very few instances, they may have been openly brought in with the consent of the medical officers. So far as my own wards are concerned, I do not believe that this has taken place in any appreciable degree—certainly not to such an extent as to vitiate the official average—except in one ward, which was only occasionally under my control, and in which a very considerable abuse was detected and remedied about a year ago. I have avoided including within the present statement any of the data so vitiated.

Another source, not indeed of error as to facts, but of possible fallacy as regards conclusions, is to be found in the circumstance that the administration of alcoholic liquors is to a considerable extent regulated by the resident physician, to whom the making up of the diet rolls is confided, and by whom, in the absence of his principal, or when uncontrolled by the express instructions of the latter, wines and spirits may be ordered and kept on the rolls at discretion. There is little doubt that, in the management of a large number of patients, through the instrumentality of young physicians who have in the first instance often their duty to learn, and whose period of service rarely much exceeds six months, there may be occasionally a certain latitude in the administration of stimulants, not sanctioned by the opinion of the principal; and, in particular, that spirits and wine, once given, are apt to be continued on the rolls too long, that is, after the emergency for which they were ordered has passed away. Still, as errors of this kind are the direct consequence of deficient control, or of a want of a proper understanding between the principal and his subordinate, I see nothing for it but for the former to take the responsibility of what is done in his name by the latter. Of late years, inadvertent errors in this direction have been in some degree checked by the monthly statement submitted on the part of the managers to the physicians and surgeons, of the total expenditure of alcoholic stimulants in each ward; and I believe, in my own case, that the variations from this cause are within moderate limits, though, doubtless, it has often happened that the allowances have been somewhat greater than a careful and critical judgment would have led me to consider expedient. It is only necessary, therefore, to regard the averages, which will be presently cited, as being in some degree *in excess* of the direct instructions of the physician, and the true bearing of this source of fallacy will be appreciated as nearly as may be.

I have now before me the rather difficult task of attempting to trace, retrospectively, the principles by which the administration of alcoholic stimulants has been guided in my wards, in connection with the details which I shall present, and of which it may very safely be said that they have accumulated without the least thought on my part of the use that was to be made of them. In doing so, I shall have to claim the indulgence of my friends among the "nephalists," or teetotallers, as well as among the stronger heads of the opposite party, for not a few exhibitions of what they may regard as want of clear reasoning up to conclusions, or insufficiently firm hold of principles. But if I am compelled to treat many important questions as undecided, I am at least still open to conviction, inasmuch as I do not pretend to put forth these details of practice as models, but rather as landmarks and bases for future investigation. The truth is, that, not having as yet formed, or pretended to form, any ultimate theory of the action of alcoholic stimulants in disease, I have always regarded their administration in practice as a sort of compromise of physical and moral considerations, often opposed to each other; and I am quite willing, therefore, in submitting candidly my own motives of action, to consider them as open to modification in either direction.

My object will be, in the first instance, to make the figures before you speak for themselves rather than to make any broad statements of personal opinion, which might be open to the objection of being framed after the view of the facts. The tables now presented to your notice are the condensed result of some much more elaborate ones in my possession, giving the total consumption of wines, spirits, and malt liquors in each of my wards during each month of the last five years, with the average population of the wards, and the daily average consumption per patient carefully calculated from the two preceding data. I have thought it sufficient to exhibit here the annual averages, founded on the total consumption for the year, divided by the number of days and by the mean number of patients in each ward, as ascertained by the regular weekly census of the whole hospital.

The results are, I confess, in some respects such as I did not anticipate. In two particulars, indeed, they are most unexpectedly opposed to all my previous impressions. I fully believed that the use of alcoholic stimulants in my hands had been at least stationary, if not decreasing. It appears, on the contrary, that there has been a nearly uniform increase (taking wines and spirits together) over the whole period under review. The increase is greater, too, in the female ward than among the males. The quantity of wine in both male and female general wards reaches its maximum in 1859; but in 1860, with a slight decrease in the average of wine, there is a decided and much more than commensurate increase in the quantity of spirits. So that, on the whole, the consumption of 1860, in the general wards, is decidedly greater than that of any previous year.[1]

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[1] It is just possible that one cause of the increase may be a greater urgency and importance of the cases under my care, as a longer period of service naturally brings with it a larger proportion of such cases. I cannot, however, posi-

In another point of view the results of the table are rather startling. It appears that, among the women in the general ward, the consumption of wine during the entire period of five years is decidedly greater than in the corresponding male ward; while that of spirits is very little less, on the whole, than in the male ward, and malt liquors are at least as much consumed among the women in sickness as among the men. As the two wards are very much alike as regards the class of cases admitted, and have been during very nearly the whole period subject to exactly the same administration, it is hardly possible that this fact can be accounted for otherwise than by the apparent need for the exhibition of stimulants, and the demand for them, having been actually greater among the women under my care than among the men. I am quite certain, at least, that there is nothing in the personal convictions of myself or my assistants to account for the fact of so liberal a comparative expenditure of wine on the female side, inasmuch as all my own prejudices and those of most other people were assuredly in the opposite direction, viz., to the effect that women ought to require, and in the better classes of society do require, a less quantity of alcoholic stimulation than men when suffering under disease, and especially acute disease.

It is matter for serious consideration, and on which I prefer to avoid dogmatizing too much at present, how far this increase of alcoholic stimulants in my hands has been a genuine and necessary result of experience of their usefulness; how far, therefore, it is an example to be followed; or how far, on the contrary, it may have gone at any period in the direction of an excess. It is probable that more accurate comparisons with the results of the hospital practice of others similarly recorded may one day lead to more fixed views on this subject. In the meantime, I can only assure the Society that I am conscious of no prejudice, either for or against the administration of stimulants, which should have interfered with the teachings of experience in the matter. Both on economical and on moral grounds, certainly, it has always been my object to keep the supplies as low as appeared to me consistent with the comfort and welfare of the sick. This has been particularly the case with the stronger spirits, which, I believe, have never been given under my orders without what was considered to be an urgent necessity, founded either on the previous habits of the patient, or the extreme character of the symptoms. I have been particularly careful, in most instances, to avoid giving whisky, or even wine, to the young; and, even in fevers, have never done so without a very positive and urgent reason. By far the greater number of the persons under 20 or even 30 years of age who have passed through my hands have

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tively assert that this is so to such an extent as to account for any considerable part of the increase; and, on the whole, I incline to view the increase as indicating a really increased confidence in the employment of these agents as remedies within the limits assigned in the sequel.

indeed, I am very sure, had no stimulants at all; and, when these have appeared to be required, a few ounces of wine for a short period, or a little table beer or light ale, has usually amply served the purpose. The same rule of caution in the administration of the stronger stimulants has been followed, so far as appeared reasonable or possible, at the more advanced ages; but it has not been considered expedient in all cases to deal rigorously with habits already in existence, and confirmed by years of indulgence previously to admission; nor has it been considered right to deny the reasonable use of the stronger stimulants to the dying, when this indulgence has obviously tended to the relief of suffering without producing any approach to intoxication.

In accordance with these views, it will be observed that the proportion of the stronger spirits to wines is, on the whole, much lower in these returns than, I believe, will be found usual in hospital practice. I have always, in fact, preferred the more expensive luxury to the cheaper one in all cases in which a choice was at all possible, and especially in the case of convalescents and young persons of sober habits. The risk of implanting bad habits of habitual indulgence (which every physician should most religiously guard against by every means in his power) has always appeared to me to be less when the stimulant used is one beyond the ordinary resources of the class frequenting the hospital; when, therefore, it is clearly seen to be a temporary allowance, granted for special and temporary ends during the period of sickness. On this ground chiefly, or indeed almost exclusively, I have not hesitated to charge the Infirmary with the heavy expense of wine in many cases where spirits would possibly have answered every purpose of mere stimulation; and, on the same ground, I recently felt it to be a duty to oppose the suggestion of a committee of the managers as to the substitution of spirits for wine in most cases. A good bitter beer or light ale would probably be far preferable to either, whether in convalescents from acute diseases, or in most chronic affections. But the habits of the Scotch labouring population are not readily changed; and beer is, unfortunately, seldom relished as a substitute for either wine or whisky. Still, it should be observed that table beer is used in considerable quantities, which do not appear in the official returns submitted with this paper.

It would be going beyond the bounds proposed in this review of facts to enter into a general theoretical dissertation on the medical uses of alcohol, or on its physiological action. But I can hardly avoid stating, what indeed it is no less than the duty of every one who so believes to state, that I have been throughout guided in the use of alcoholic stimulants by the conviction that they are really *stimulants* and *tonics*—i.e., *medicines*—and not food, properly so called. The maintaining of the opposite view by so high an authority as the late Dr Todd, and the practice founded upon it of giving these stimulants, as a general rule, at an early period of acute diseases, and in very frequently repeated doses all through the day and night, I cannot but regard as a grave error, leading to the probability, almost the certainty, of an injurious excess in their use. My own habitual practice has been to give stimulants, if at all, only in very moderate quantities along with the food, and, in general, as an aid to the digestion of food,—the only exceptions being in the case of persons largely and habitually dependent upon stimulants from old and formed habits, and in a comparatively small number of acute cases for a very few days, sometimes only a few hours, to help the system over a dangerous crisis, or to co-operate with other needful remedies, such as antimonials in pulmonary inflammation. I feel quite assured that there have been no such facts in my experience of alcoholic stimulants as are mentioned in Dr Todd's last volume[1]—*e.g.*, brandy, at the rate of 6 drachms every hour, given to a girl of 17 years of age in rheumatic inflammation (Case of Jane Cook, LXIV.); or, in another case (Sarah Butcher, LXXI., age and habits not stated), a pint a day of brandy for a month together in pyæmic inflammation. Such facts are, I cannot help thinking, the indications of a great excess, if not of an entirely wrong direction, in the use of these powerful remedies; which, to be powerful for good and not for evil, must be maintained strictly within the limits of their medicinal action, and given, not *as being food* in themselves, but rather as *adjuvants to food*—*i.e.*, as aids to the gastric digestion, and stimulants of the nervous system and circulation. I quite agree, however, with Dr Todd in thinking that when stimulants really act beneficially in acute disease, they diminish the frequency of the pulse and restrain the tendency to delirium, while improving the appetite and producing an amendment in all the general symptoms. On the other hand, I cannot but demur to his inference that delirium and other bad symptoms, even if increased under small doses, are to be kept down by giving much larger quantities. To regard flushing of the face and increased feverishness, for example, as not a contra-indication, but a reason for increased administration (Lecture viii., p. 269), is opposed entirely to the practice I have followed; for, under such circumstances, or even when stimulants have not been obviously followed by reasonably good effects after a cautious trial of small quantities, I have nearly always abandoned them at once as being unsuitable remedies, at least for the time; and, accordingly, it has never occurred to me to have to "sluice the head well with cold water," or to use any of the other means recommended in Dr Todd's fourteenth lecture, in order to distinguish "the coma of alcohol" from "the coma of disease" in cases of accidental over-stimulation.

Let me add, that another opinion prominently put forward in Dr Todd's book appears to me to demand qualification, viz., that "it is far more dangerous to life to diminish or withdraw alcohol than to give too much." So far from having had constantly before me the fear of sacrificing life by diminishing or withdrawing a habitual allowance of stimulants, I have made it part of my regular practice to do so in most cases of persons accustomed to the use of ardent spirits in excess, and especially in many cases of delirium tremens, or of other acute diseases modified by alcoholic excesses; and though not committed to the treatment of any disease entirely without stimulants, I can entirely corroborate the remarkable statements made by Dr Peddie in his very important memoir on delirium tremens,[1] viz., that the suppression of the habitual allowance is not, *per se*, dangerous in most cases; but, on the contrary, extremely conducive to the cure. In regard to other diseases, I believe that much more mischief is done by the routine administration of stimulants than could possibly result even from their entire suppression in hospital practice. In the case of young persons affected with fever, indeed, it has been almost made matter of demonstration by statistical data, that the stimulating practice, pursued on Dr Todd's plan, was the opposite of useful in the saving of life.[2] Nor can it be doubted that in pneumonia, as well as in fever, Dr Todd's practice, as recorded by himself, was less successful than that of many practitioners who are less liberal in the administration of alcoholic stimulants. It is quite true that comparisons cannot always, or indeed often, be drawn with accuracy from limited numbers of cases in different spheres of observation; nevertheless, I feel well assured that the recorded mortality from the cases of pneumonia or fever occurring under Dr Todd's care in King's College Hospital, would be regarded as excessive in the Edinburgh Royal Infirmary. On this subject it is sufficient for the present purpose to refer to the "Five Years' Hospital Experience of Pneumonia," published in the *Edinburgh Medical Journal* for March 1860; and to the "Clinical Notes on Fever," in the same Journal for July 1859, although neither of these papers were compiled with a view to the present inquiry; nor would it be fair to Dr Todd to assume that his cases were parallel to those referred to in these papers.

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[1] *Clinical Lectures on Certain Acute Diseases.* London, 1860.

I may, in conclusion, be permitted to refer to the *Edinburgh Medical Journal* for February 1858. The review of the arguments at p. 735, *et seq.*, in regard to the medical uses of alcohol, is so expressive of the views I have all along held on this subject, that I am well satisfied now simply to lay claim to the authorship of this anonymous paper as evidence that the opinions now put forward had been carefully considered long before this paper was thought of. The recent progress in the physiology of the subject, and especially the researches of Lallemand, Perrin, and Duroy in France, and of Dr Smith of London, appear to me to be in general confirmatory of the ideas expressed in that review; although, no doubt, some of the questions in controversy may still for a long time remain open to discussion on points of detail.

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[1] *On the Pathology of Delirium Tremens, and its Treatment without Stimulants or Opium.* Edinburgh, 1854.

[2] See Dr Murchison's interesting and convincing arguments in the *British and Foreign Medical Review* for October 1860. The subsequent controversy in the *British Medical Journal*, and *Lancet* for November, appears to me only to strengthen the original case.

The object of this paper will be served if it shall be the means of procuring more accurate records than hitherto of the actual expenditure of alcoholic stimulants in hospital practice. Considering the vast moral issues involved in this question, and considering also the important economic interest which the governors of our public charities have in keeping within reasonable bounds the administration of stimulants, it is surely not too much to suggest that in every hospital in this country monthly returns should be made, exhibiting, as in the Edinburgh Royal Infirmary, the aggregate expenditure in each ward, and also a calculated average of the amount supplied to each individual patient. By such averages, physicians would be insensibly guided to the truth; and the results of various practice would, when carefully compared, supply data hitherto wanting for the settlement of a great many scientific questions connected with alcoholic stimulants.

Average Daily Consumption of Alcoholic Stimulants per Patient during Five successive Years, in the Royal Infirmary, Wards 4, 15, and 16.[1]

| | 1856. | 1857. | 1858. | 1859. | 1860. |
|---|---|---|---|---|---|
| General Ward, Males— | | | | | |
| Wines (ounces) . . | 0·158 | 0·465 | 0·710 | 0·928 | 0·739 |
| Spirits (ounces) . . | 0·056 | 0·312 | 0·287 | 0·184 | 0·454 |
| Malt liquors (pints) . | 0·039 | 0·040 | 0·025 | 0·053 | 0·058 |
| General Ward, Females— | | | | | |
| Wines (ounces) . . | 0·446 | 0·534 | 0·799 | 1·498 | 1·200 |
| Spirits (ounces) . . | 0·295 | 0·312 | 0·223 | 0·164 | 0·510 |
| Malt liquors (pints) . | 0·064 | 0·069 | 0·048 | 0·061 | 0·048 |
| Fever Ward, Females— | | | | | |
| Wines (ounces) . . | 0·715 | 1·256 | 1·734 | 1·725 | 1·140 |
| Spirits (ounces) . . | 0·069 | 0·083 | 0·346 | 0·052 | 0·135 |
| Malt liquors (pints) . | 0·023 | 0·029 | 0·135 | 0·069 | 0·027 |

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[1] In regard to these latter wards, it is to be observed, that in the middle of 1858 a change took place in the distribution of fever and general cases, which has been carefully kept in view in reducing the monthly to annual average. The tabular statement, therefore, does not correspond with the results of either ward separately calculated.

## ARTICLE II.—*A Short Account of Two Fatal Cases of Heat Apoplexy, which occurred in August last on board the Peninsular and Oriental Company's Screw-Steamer "Colombo," on her Voyage from Suez to Aden.* By ROBERT LITTLE, M.D., F.R.C.S.E., Singapore.

THE frequent occurrence of casualties from "Heat Apoplexy" in the Red Sea, induces me to lay before the profession a short account of two fatal cases which came under my notice while voyaging from Suez to Aden, on board the Peninsular and Oriental Company's s.s. "Colombo," in August last.

The passengers, by the 4th of August mail to India, embarked at Suez on the 19th of August. Of these there were 80 first-class passengers, 30 second-class, and 10 children—in all, 120: a number much below the passenger capacity of the ship, which is of 2200 tons measurement, 335 feet long and 37 feet in beam at the water line, and on deck 34 feet in beam. The crew of the ship, including officers, European and native sailors, and engineers, was 233. All who embarked were apparently in good health, except the Captain-General of the Philippines, who had for some time been suffering from fever, and whose whole appearance indicated great physical debility and unfitness for the arduous duties he was about to undertake.

The first evening and night on board were passed in much discomfort by all, few having enjoyed a refreshing sleep. The next day, the 20th, was hotter than the preceding one, and all experienced a greater degree of lassitude and languor. The night of the 21st was like that of the 20th, but hotter and more oppressive; and the imperfect state of the ventilation below induced most of the gentlemen passengers to stay during the night on deck. For myself, having my family with me, I remained in my cabin, passing the night in vain attempts to cool myself by fanning. On the 21st, the heat was greater than it had been as yet (99° in the coolest part of the ship); but the feeling of oppression, lassitude, and debility was much more marked than could be accounted for by the height of the thermometer, and was perhaps to be attributed to the exhaustion caused by the heat of the previous days. About noon the Spanish Governor-General was reported to be very ill, but I did not see him till within a few minutes of his death, when he lay on the deck, whither he had been brought shortly before.

22*d*. The death of the Governor-General did not affect the spirits of the passengers, as they supposed the heat had injured him fatally on account of his previously feeble health and old age.

23*d*. During the last three nights the ladies have slept in the saloon with the punkahs in motion over them all night. The sensation of heat and feeling of oppression were on the increase, probably because a faint breeze, which blew along the ship from stem to stern, carried with it the superheated air of the engine-room. Shortly after mid-day, I noticed a stout gentleman, Mr M'L——, rise from his seat in the after part of the saloon, and with a rather unsteady gait rush past to go on deck, where he immediately fell down insensible, and died in the course of an hour afterwards. I saw him a few minutes before his death. He was then unconscious; the skin was cool and wet with perspiration; the inspirations were deep and prolonged; the eyes were dim, and the pupils contracted; the pulse was full, soft, and about 110; and fæces were passed involuntarily. The treatment that was adopted in this case by the surgeon of the vessel, in consultation with Surgeon-Major Macdonald of H. M. Forces, was, ice to the head, sinapisms to the calves of the legs, and lint wet with the liq. amm. fort., V. S. to at least 30 ounces; and a turpentine enema was to have been given had he lived a few minutes longer. Soon after this gentleman had passed me in the saloon, I was informed by the stewardess that Mrs Little's maid had fainted whilst at dinner in the fore-cabin; and immediately afterwards I saw her staggering into the saloon, held up in the arms of one of the stewards, being quite unable to walk or stand unsupported. I ordered her to be laid down on her back with the head raised on a pillow, ammonia to be applied to the nostrils, and iced water to be dashed over her face. These measures not recovering her, she was brought further into the saloon to a more convenient situation, and placed on the table under the punkah; but, notwithstanding all treatment, she died in rather less than five hours after her seizure.

**History.**

C. B——, æt. 21, of stout make, pale face, dingy skin, with rather a chlorotic appearance. Having joined us in London so lately as the 1st of August, I am not acquainted with her previous state of health, except that she said it had always been good. During the voyage from Southampton to Alexandria she enjoyed good health, was sea-sick only for a day or two, and complained of slight faintness once or twice, which was attributed to sea-sickness. Her appetite was good; and, having every facility, she indulged it, thus laying the foundation of a state of plethora which may have contributed to the fatal result. While on board the "Colombo," she was never exposed to the sun's direct rays; and for three nights prior to her attack, she slept with the ladies in the saloon. Before that, she had, owing to the great heat in the second-class female cabins, in company with a married woman, actually spent two nights in a water-closet, that place being cooler, and therefore preferable to their berths. This fact I learned after her death. Unlike to similar deaths from heat apoplexy occurring in India amongst soldiers, there was no muscular exertion associated with the heat to produce the apoplexy; for her duties consisted in attending to one child, who would, she being a stranger, seldom remain with her. On the 21st she had complained of headache, and was constipated; and she had therefore two laxative pills given her, which produced complete relief; for on the 22d she said she was much better than she had been for some time. On the 23d, at noon, whilst in the fore-cabin, she was observed to nod several times as if overcome by sleep; she was asked to take some soup, but would have only a glass of water. Soon after she asked the stewardess to report that she did not feel well, and immediately followed her; and was seen by me staggering into the saloon in the arms of a steward. She was then nearly unconscious, and for a few minutes only appeared to understand what was said to her. She tossed her arms about most wildly, struggled with those who held her, and, calling out that she was not prepared to die, threw herself on her knees as if to pray; almost immediately she lapsed into a state of complete insensibility, with occasional struggles until her death, nearly five hours afterwards.

The earlier symptoms were—loss of directive power of the limbs, so that, whilst progressing, she staggered; slight unconsciousness, tossing of the limbs, and loud vociferation,—this condition being rapidly followed by a gradually increasing depth of coma. The pupils were contracted, and the corneæ glazed and hazy. The pulse varied from 110 to 120, and was full and bounding. The heart's action and the pulsation in the carotids were very violent. The skin was much hotter than natural; and, while administering an enema, I was much struck with the intense burning sensation in and about the anus and external generative organs. Before death the sphincter ani became relaxed.

**Treatment.**

At first ammonia was applied to the nostrils, and iced water dashed on the face and upper part of the body. Ice was applied to the head; sinapisms and the liq. ammon. fort. to the legs; pounded ice and iced water were given by the mouth; hot fomentations were applied to the abdomen; turpentine and castor oil were administered in an enema; and blood was drawn from the arm to the amount of ℥viij., in the hope of reducing the intensely tumultuous action of the heart.

It has occurred to me, on after consideration of these cases, that the pathogenesis of this disease lies in the fact of the expansion of the cerebro-spinal fluid causing pressure on the thalami, the corpora striata, the grey matter of the cerebrum, and the medulla oblongata, to which all the symptoms observed are referable. This condition is doubtless kept up and intensified by the violent forcing action of the heart which is so soon manifested, and is doubtless due to some irritation, "sui generis" in the atmosphere, acting upon the excito-nutritive nerves. This assumption is rendered probable by the fact, that individuals in other parts of the tropics, as well as workmen engaged in certain trades, are liable, from exposure to high temperature, to be seized with unconsciousness, attended by *diminished* action of the heart. This often happens with stokers subjected to a very high temperature (frequently 150° Fahr.),—they fall down insensible, are quickly carried on deck, and put under a stream of water. The application of cold diminishes the expansion of the cerebro-spinal fluid, which I believe brings about those symptoms; at the same time the heart is urged to increased action by the cold affusion; a normal supply of arterial blood circulates through the brain, and the sufferer speedily recovers. But in such cases as that of C. B., we have the concurrence of *the expansion of the intracranial fluid* and *the violent action of the heart*, and thus the cerebro-spinal axis is as it were jammed between opposing forces.

"Heat Apoplexy" may, therefore, in my opinion, be considered as the result of pressure exerted upon the cerebro-spinal matter, by the intra-vascular blood on the one hand, and by the expanded cerebro-spinal fluid on the other,—this being concurrent with irritation of the sympathetic system, produced in certain constitutions by some peculiar condition of the atmosphere, which cannot be explained.

Treatment founded on these suppositions ought to be just as it was,—viz., cold to the head; derivation by counter-irritation to the lower extremities; the administration of ice and of turpentine enemata, with V. S. to a moderate amount. Should I happen to meet with another such case (as in this delightful and temperate climate of Singapore is not likely), I should feel disposed to try the effect of full and repeated doses of Fleming's tincture of aconite, or of the tincture of the white hellebore, as prepared by my friend Dr W. Wilkinson; and this with the view of subduing the excitement of the nervous system, and reducing the inordinate action of the heart.

These remarks have been made on a disease which is of serious importance, and with regard to the pathology and treatment of which but little is known; and should they prove suggestive of further inquiry, or lead to the establishment of a rational basis of treatment, my object in penning them will have been attained.

SINGAPORE, 23*d November* 1860.

## ARTICLE III.—*Statistics of Prisoners: their Mental Condition and Diseases.* By J. B. THOMSON, L.R.C.S. Edin., Resident Surgeon, General Prison for Scotland at Perth.

### No. III.

IN my former papers on the Statistics of Prisoners, which appeared in this Journal in the months of August and October 1860, I treated of the physical condition of prisoners, their death-rate and their diseases. The facts and figures then set forth elicited results which must be eminently satisfactory to all who take a humane interest in our criminal population. I may here very briefly recapitulate the general conclusions to which an analysis of our statistical tables led, viz.:—

1. That the ratio of mortality in the General Prison for Scotland is 1·60 per annum, or about 16 per 1000 prisoners; and, adding to the actual deaths one-third of the number who were liberated on medical grounds, the death-rate would be 1·78 per cent. per annum.

2. That tubercular diseases, in frequency and fatality, rank as the highest class; but our greatest mortality, which is from phthisis, is, to a fraction, the same as in civil life, according to the Reports of the Registrar-General.

3. That, after phthisis and diseases of the respiratory class, those of the nervous system are next in numerical importance.

4. That a singular immunity from zymotic diseases belongs to prisoners; and that scrofula and diseases of debility are often benefited by the hygienic treatment and dietary of the Prison.

5. That diet and penal discipline are in little or no degree chargeable with the physical diseases of prisoners.

6. That the character of the diseases is of a chronic and cachectic kind, requiring generally good diet and cordials.

7. That the causes of prisoners' diseases may be chiefly traced to hereditary taints from depraved and degraded parents; early privations and excesses; habitual dissipation; and systems "worn-out" by long and frequent confinements in prison.[1]

Taking a review of these results of an examination into the physical condition of prisoners, no one can doubt that this class is privileged with the most marked attention to their bodily welfare; and, comparing the state of our pauper and our prison population, we need not wonder to hear at times reflections as cynical as that of Rochefaucault, "*Il s'en faut bien que l'innocence trouve autant de protection que le crime.*"

While all anxiety is relieved as to the physical, much anxiety still prevails among men of light and leading in criminal legislation as to the psychical, condition of prisoners. It is curious enough to remember that the great philanthropist and friend of the prisoner, Howard, originated the idea of the *solitary system*—the most grave and severe of all penal systems. This idea was started to counteract the evils of promiscuous association and defective means of classification. Happily, this solitary system did not find acceptance in this country; and, as might *a priori* have been expected, the experience of it in America proved that solitude and cell-seclusion were the sure factors of insanity. The present prison discipline—*the separate system*—is a modification of the solitary and the silent systems; and here it is necessary to say *what is meant* by the *separate* system. At first the terms were applied to that system in which each prisoner was confined to a cell—his workshop by day, and his bedroom by night—

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[1] It was my intention to have gone on to show the general physical condition by tables of weights—comparing the state on admission and at liberation, etc.—but this inquiry I postpone, for the purpose of having data on a more extended scale, and from larger experience of the effects of long confinement upon certain classes of prisoners.

so as to be effectually prevented from holding communion with, or being even seen so as to be sufficiently recognised by, a fellow-prisoner. The objects were twofold: to lead the prisoner to self-communion in the solitude of his cell, and to prevent the evils of communication with others. In consequence of its severe effects upon the mental condition, this, the original separate system, has been much tempered and ameliorated. Into these changes it is unnecessary to enter at present. Yet, notwithstanding of great relaxations of the strictly separate system, its workings are watched with much concern and consideration; and the *questio vexata* remains open, "How *far is the separate system of prison discipline injurious to the mental health of prisoners?*"

This inquiry being involved in my Statistics, and a matter vital to our penal system, I shall try to deal with premises rather than conclusions, adhering to the precept of Lord Bacon, "*not to contradict nor to believe, but to weigh and consider.*"

I propose to present the mental condition of prisoners for consideration under the following heads:—

I. Of the Mental Condition of the Criminal Population as a class.

II. Of the Mental Condition maintained in Prison, and the Nervous Disorders of Prisoners not in the Lunatic Department.

III. Of the Criminal Lunatics and the Lunatic Department.

The data upon which my observations chiefly rest are contained in the following Tables:—

### TABLE I.

*Showing the Daily Average Prison Population, and Number of Prisoners whose Mental Condition called for the Surgeon's attention and treatment, during the Decennial Period* 1851 *to* 1860 *inclusive.*

| Years. | Daily Average Prison Population. | Number associated for Mental Condition. | Number under Special Observation for Mental Condition. | Total. |
|---|---|---|---|---|
| 1851 | 417 | 29 | Averaged from last Three Years at 35 per Annum. | |
| 1852 | 434 | 34 | | |
| 1853 | 459 | 37 | | |
| 1854 | 580 | 32 | | |
| 1855 | 498 | 32 | | |
| 1856 | 583 | 29 | | |
| 1857 | 593 | 43 | | |
| 1858 | 561 | 20 | | |
| 1859 | 632 | 36 | | |
| 1860 | 675 | 31 | | |
| | 5432 | 323 | 350 | 673 |

The average annual number who have merely been under special observation—and not associated—for their mental weakness, is taken from an average of the last three years, as these are the only years of which I have any accurate record regarding this class. It thus appears that the average amount of prisoners who have been noted and reported for certain forms and degrees of mental weakness (but not lunatic) number, for the last ten years, 67 per annum, or fully 12 per cent. of the average daily population. It would not be difficult to swell the number by bringing in a class in a less degree weak-minded than those reported.

The mental condition of those in the above Table I. may be classified as under:—

| | |
|---|---|
| Imbecile, or weak-minded, . . . . | 580 |
| Do., and Suicidal, . . . . . | 36 |
| Epileptic, . . . . . . | 57 |

Table II. gives the dates, whether on or after admission, when it was found necessary and proper to associate the associated class:—

### TABLE II.

| | |
|---|---|
| Associated on Admission, or under the Third Month of Imprisonment, | 123 |
| During Third Month, and under Sixth Month, . . . | 59 |
| During Sixth Month, and under Ninth Month, . . . | 64 |
| During Ninth Month, and under Twelfth Month, . . | 37 |
| During Twelfth Month, and under Eighteenth Month, . . | 38 |
| Above Eighteen Months, . . . . . | 2 |
| | 323 |

Table II. is remarkable for the number associated on admission and before the end of the third month; and it is probable that most of these, on admission, were mentally weak, although it did not appear immediately. So far as I can discover, the majority were congenitally imbecile or weak-minded to some extent.

The next Tables, III. and IV., apply to the insane in the Lunatic Department.

### TABLE III.

*Prisoners sent to the Lunatic Department of the General Prison, having become insane whilst undergoing their sentences in the Main Prison, during the Decennial Period* 1851–60.

| Years. | 1851. | 1852. | 1853. | 1854. | 1855. | 1856. | 1857. | 1858. | 1859. | 1860. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 1 | 0 | 1 | 0 | 2 | 4 | 4 | 5 | 6 | 25 |

The most striking feature of this table is the increased number during the latter compared with the former quinquennial period, viz.:—

| | |
|---|---|
| From 1851 to 1854, . . . . . . | 4 |
| „ 1855 „ 1860, . . . . . . | 21 |

## TABLE IV.

*Shows the Admissions of Criminal Lunatics who (found insane in bar of Trial, or at the time of committing the offence charged) were received into the Lunatic Department of the General Prison in these Years,* 1851–60.

| Years. | 1851. | 1852. | 1853. | 1854. | 1855. | 1856. | 1857. | 1858. | 1859. | 1860. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 9 | 9 | 3 | 2 | 6 | 3 | 5 | 6 | 8 | 2 | 53 |

In terms of the previous arrangement of the subject, I come to consider:—

I. The Mental Condition of the Criminal Population as a class.

My observation of prisoners for the last three years has led me to adopt the opinion, that, as a class, their intellects are much below the average; and that a large proportion are congenitally of imbecile mind. I know this is quite opposed to the popular prejudice; and that within the pale of the profession, and even by psychologists, the mental calibre of this class is viewed in an opposite light. Civilians are believed to be inferior to criminals in intellect. This opinion seems to have arisen from the colouring of the drama, and romantic tales of cunning and accomplished rogues, "with rare abilities, of which God has given them the use and the devil the *application*." These are exceptions to the general rule; and it is time that the truth were known and admitted, that criminals, upon the whole, are of an inferior order of mind to the industrial classes.

The first proof I offer of this proposition is drawn from Table I., now before us, of the Statistics as to the Mental Condition of the Prisoners generally in the General Prison for Scotland. During the ten years under review, the tables show 12 per cent. fully, reported for various degrees of mental weakness—in all, 673. Of these, 323 could not bear the separate system of the prison discipline, and required to be associated. This association is carried out generally in hospitals;—a ward being appropriated for imbeciles and a ward for epileptics in the male and female departments of the Prison. But the most singular fact in these tables *is the large proportion who were on admission, or before the end of the third month, found to be imbecile or weak-minded.* These I consider to have been imbecile from *congenital* causes.

This statement is confirmed by our previous statistics of the physical diseases of prisoners. The diseases and deaths originating in the nervous system were only second in numerical importance to those of the respiratory system, including phthisis. For the decade 1850–59 we had the following deaths:—

| | |
|---|---|
| Decay from Insanity, . . . . . . | 6 |
| Paralysis, . . . . . . . | 2 |

| | |
|---|---|
| Brain Disease, . . . . . . | 4 |
| Suicides, . . . . . . | 3 |
| "Worn-out" by gradual decay of mind and body, . | 11 |

making nearly one-third of all the deaths.

The physical degeneration and worn-out systems evidently pointed to hereditary causes. And surely, at this time of day, we will not be accused of materialistic views if we hold that physical is allied to psychical deterioration; and that somatic as well as moral causes induce mental imbecility.

It is well known to all conversant with prisoners, that they have a peculiar *physique.* Indeed, there is a criminal type of men and women, assimilating much to the lowest Celtic varieties. Their features are dog-faced and angular; face square rather than oval; the expression sinister. Fine physical organization is uncommon among them; and beauty of feature, of form, of colour, or expression, rare indeed. Referring to the relation of physical and moral heritage, Morel says:—"The condition of degeneration in which the heirs of faulty dispositions find themselves are revealed, not only by exterior typical characters, easily to be recognised, such as a small, ill-formed head, predominance of morbid temperament, spinal deformation, and anomalies, etc.; but also the strangest and most incomprehensible aberrations in the exercise of the intellectual faculties and moral sentiments." Accordingly, I see many physical abnormities here. At present, two cases of deaf-dumbness, two of defective palate, numbers congenitally deaf, several with spinal deformity; and the epileptic cases are uniformly original in the constitution.

As this phase of the criminal character is somewhat new to psychologists, I think the following table not uninteresting:—

*Prisoners Weak-minded or Imbecile on Admission (and who probably were so congenitally), placed on the Register of the Mental Condition of Prisoners in the General Prison during the Year* 1860.

| No. | Name. | Age. | | Condition. | Probable Cause. | Remarks. |
|---|---|---|---|---|---|---|
| | | M. | F. | | | |
| 1. | A. D. | ... | 26 | Insane. | Congenital. | This woman became subject to delusions, that she had committed a heinous crime, for which she was to be hanged; had an attack of acute mania, and was recovering when liberated. |
| 2. | A. M'I. | 22 | ... | Epileptic. | Do. | Irritable, quarrelsome, and given to strike. |
| 3. | J. J. | ... | 26 | Imbecile. | Do. | Often in prison. On admission, required to be associated; afterwards had delusions about persons entering her cell; that the surgeon drugged her; at length broke down, worn-out in body and mind. Died 28th Feb. 1860. |
| 4. | L. O. | ... | 19 | Suicidal. | Congenitally Weak-minded. | Very scrofulous; often threatened suicide, and attempted it by throwing herself, in a fit of rage, over a railing. |
| 5. | M. W. | ... | 22 | Do. | Do. | Violent; says that syphilis destroyed her health; suicidal; could not bear separation. |
| 6. | J. C. or C. | 18 | ... | Imbecile. | Do. | After being some months here, gave way to delusions, that his food is poisoned; he is querulous, given to strike, and unfit for separation. |
| 7. | J. M. | 25 | ... | Do. | Do. | On admission, very weak-minded; his crime was, repeatedly assaulting a girl, the peculiar circumstances of the case proving his mental weakness and want of self-control. Certified to Crown counsel that he was unfit to be at large in the locality he left, where the girl was. |

| No. | Name. | Age. | | Condition. | Probable Cause. | Remarks. |
|---|---|---|---|---|---|---|
| | | M. | F. | | | |
| 8. | A. M'D. | ... | 16 | Weak-minded. | Congenitally Weak-minded. | Has an imbecile look; passionate and suicidal. |
| 9. | J. R. | ... | 17 | Do. | Do. | Suicidal; violent in temper; without moral control. |
| 10. | J. R. | ... | ... | Do. | Do. | Belonging to a thieving race; often in prison; about 100 times in punishment under last sentence; suicidal; an incorrigible prisoner. |
| 11. | B. M. | 25 | ... | Imbecile. | Do. | Imbecility written on his face; became worse here; had delusions about his food being poisoned; associated. |
| 12. | L. M'I. or I. | ... | 33 | Do. | Do. | Suicidal; tried suicide by cutting her throat with scissors; of unsettled temper. |
| 13. | J. R. | ... | 21 | Do. | Do. | Often violent and suicidal; a frequent prisoner. |
| 14. | A. W. | ... | 17 | Suicidal. | Congenitally Weak-minded. | Scrofulous; stabbed scissors into her throat; subject to violent fits of rage. |
| 15. | A. B. or G. | ... | 25 | Imbecile. | Do. | On admission, suicidal and imbecile. |
| 16. | G. B. | ... | 17 | Do. | Do. | Had delusions about her food; capricious in temper; unfit for separation. |
| 17. | R. B. | 23 | ... | Epileptic. | Do. | In prison before. |
| 18. | N. L. | 17 | ... | Imbecile. | Do. | Could not bear separation, and was associated. |
| 19. | A. B. | ... | 16 | Do. | Do. | Formerly here imbecile. Her father is insane. |
| 20. | A. C. or T. | ... | 41 | Do. | Do. | Repeatedly insane before admission. |
| 21. | J. B. | ... | 26 | Do. | Do. | Formerly insane; admitted imbecile, and was associated; at length insanity supervened, and she is now in Lunatic Department. |
| 22. | E. M'E. or R. | ... | 34 | Do. | Do. | In separation, became suspicious and jealous, with delusions that officers were reporting evil of her; required association. This woman's sentence was 24 months' duration. |
| 23. | D. G. | 30 | ... | Do. | Do. | His mind gave way to delusions; he became irritable and insane; he is now in the Lunatic Department. |
| 24. | J. S. | 24 | ... | Do. | Do. | His mind, never strong, suffered by separation, and he was associated. He received a free pardon from her Majesty; medical certificates testifying that his mind was likely to improve by restoration to his family. It was so. |
| 25. | M. M'G. or I. | ... | 35 | Epileptic. | Do. | Weak-minded, as well as epileptic. |
| 26. | H. M. | 15 | ... | Weak-minded. | Do. | In separation this lad's mind became worse; he thought he heard persons swearing and rapping at his cell door by night; he improved by association. |
| 27. | J. B. | 15 | ... | Do. | Do. | His mind became worse in separation; imagined persons entered his cell and seized him. *He has a sister insane.* He improved in association. |
| 28. | M. P. or M'N. | ... | 44 | Do. | Do. | Became stupid and more imbecile in separation, and is associated; general paralysis is affecting her gradually. |
| 29. | P. M'G. | 16 | ... | Suicidal. | Weak-minded. | Weak-minded on admission; became more suicidal. |
| 30 | J. H. | 21 | ... | Weak-minded. | Do. | Became worse in separation, and required association. |
| 31. | S. D. or M'D. | 20 | ... | Suicidal. | Do. | Admitted suicidal, and was associated. |
| 32. | T. C. | 27 | ... | Imbecile. | Do. | Was insane twice before. |
| 33. | T. M'Q. | 14 | ... | Do. | Do. | Became sullen, suspicious of poison, irritable; has a brother, lately here, sent to Morningside Asylum. |
| 34. | A. M'Q. | ... | 19 | Do. | Do. | Soon after admission, became sleepless; alarmed about ghosts, who came into her cell at night; associated, and relieved thereby. |
| 35. | M. C. | ... | 19 | Do. | Do. | Violent, and threatening fellow-prisoners without cause |
| 36. | M. P. | ... | 25 | Do. | Do. | Often in prison; has fits of rage, smashing prison furniture; every time she comes here weaker in mind. |
| 37. | J. M. | 33 | ... | Do. | Do. | Has the physiognomy of imbecility; became worse in separation, and was associated. |
| 38. | J. S. | ... | ... | Weak-minded. | Do. | These are now and then liable to acts showing an unsettled state of mind. |
| 39. | C. Q. | 45 | ... | Do. | Do. | |
| 40. | E. S. or R. | 35 | ... | Do. | Do. | |
| 41. | C. W. | ... | ... | Do. | Do. | |
| 42. | L. M'I. | ... | 33 | Do. | Do. | |
| 43. | M. C. | ... | ... | Do. | Do. | |
| 44. | J. S. | ... | ... | Do. | Do. | |

The foregoing table of cases gives a very inadequate idea of the amount of mental disorders and varied degrees of weak-mindedness among the prisoners here. There are a number who have never had occasion to be reported for their mental condition, such as :—

A number whose aspect and physiognomy indicate an original defective intellect; also, A number whose notorious irritability of temper and impulsive tendency to turbulence and disorderly conduct it is difficult to explain, but by attributing their continued and persistent misconduct and incorrigibility to a congenital weakness and habit of vice, which is beyond their control.

Such cases puzzle the medical officer very much, and are interesting to the psychologist as illustrative of a mental condition bordering upon insanity, showing the singular alliance betwixt crime and mental imbecility. The following case illustrates what is not uncommon—the impetuous and impulsive way in which a certain class of prisoners rush into desperate acts:—

C. J., a female convict, under four years' sentence of penal servitude, after a trifling quarrel with a fellow-prisoner on her way from chapel, suddenly rushed up stairs, and succeeded in throwing herself from a gallery three stories high. She suffered concussion of the brain, fracture of bones of left arm and fore-arm, and other serious injuries, but gradually recovered. This prisoner made a similar attempt at a prior period, on receiving news of the death of her mother.

I look upon such violent and impulsive acts as the potential results of an unsound nervous system, the most common failing and feature especially of convict women, and attributable to diseased mental states derived from heritage. Take another example:—

E. G. or K. This woman was in Brixton, a convict, formerly; feigned insanity; was violent and most incorrigible. She attempted here suicide in various ways, and nearly hanged herself. She threatens to destroy every officer, and then herself. No one will be associated with her. She is separate, and restrained very often; and, having threatened to knock her brains out against the wall, is under special observation at all times.

There is a very numerous class of incorrigibles who seem to be altogether intractable by mild or by severe discipline. Punishment, although painful to their bodies and injurious to them every way, has no effect upon them. They actually want the common instinct of self-preservation.

J. R. has been punished in her last confinement 95 times; excused and pardoned often. She continued incorrigible to the last.

E. M'K. was punished 46 times; yet, through the course of her imprisonment of years, she every now and then broke out, destroying all the articles of her cell, and was often turbulent.

A. T., weak-minded, every now and then smashed all the dishes in her cell, etc., threatened suicide and threatened officers, etc., without any reason.

H. B., much the same as A. T.; punished 19 times.

J. R. Violent, destructive, suicidal; punished 19 times.

Scores of cases similar to these might be collected, proving that a large number are subject to an uncontrollable temper, over which punishment, to the occasional suffering and injury of their bodies, has no influence.

The uniform *testimony of prison officials is that prisoners are generally weak-minded.* When visiting the English prisons, I had this concurring opinion from all the most experienced governors, chaplains, and medical officers. The teacher of the juvenile delinquents here, who, before the establishment of Reformatories, numbered occasionally 40 or 50 at a time, asserts the same. All under 14, and sometimes up to 16 years of age, were taught together in a class-room the elements of secular and sacred education, and also learned a trade together in an association-room. The teacher says:—"I considered that fully more than a third were of imbecile mind. These made little progress comparatively; had defective memory; required every lesson to be kept long continuously before them, and often without any good results. Of the other two-thirds I could not speak very favourably either. They were deficient in the power of attention and application, from want of regular habits of life previously. They were indolent, self-willed; those who made creditable progress were the exceptional cases." I observe that Sir J. Kaye Shuttleworth considered, when examining the juveniles at Parkhurst, that they were defective in physical organization. From personal observation among the miners, I am satisfied that the children of parents inferior in physical and mental calibre, have not the same aptitude for taking up education as the more improved industrial classes. Among the miners, I am of opinion, a large proportion are weak-minded. The same remarks are applicable to the criminal population. The only other testimony on this subject I think it necessary to quote is that of the late Dr Malcom—a shrewd observer of men, of large experience, and who, as medical superintendent of Murray's Royal Asylum for Lunatics, had made a special study of mental diseases. He says, in one of his manuscripts found among his prison notes after his decease (and I give *ipsissima verba*):—"In going over the General Prison, I have long been struck with the various characters of the prisoners; their total obliquity of all moral feelings, the propensity of their nature, and their total impracticability. Neither kindness nor severity has any influence on such people; but they go on, from day to day, in devising and doing wrong, although their conduct entails upon them further privation. Many of them have been habitual drunkards, and their constitutions are broken down and enfeebled by this vice, added to their irregularity and often want of food, wretched unwholesome lodgings, spare clothing, and filth. In all my experience, I have never seen such an accumulation of morbid appearances as I witness in the *post-mortem* examinations of the prisoners who die here. Scarcely one of them can be said to die of one disease, for almost every organ of the body is more or less diseased; and the wonder with me is, that life could have been supported in such a diseased frame. *Their moral nature seems equally diseased with their physical* frames; and, whilst their mode of life here reanimates their physical health, I doubt whether their minds are equally benefited, if improved at all. *On a close acquaintance with criminals, of* 18 *years' standing, I consider that nine in ten are of inferior intellect, but that all are excessively cunning.*"

This examen might be strengthened by the consideration of the *causes* of nervous debility *ab ovo* to which criminals are subjected.

*The Hereditary Crime in the families who constitute the caste and commonwealth of crime.*—The very *locale* in which they are born and bred and fed is fitted to pollute the blood and poison the brain. The *intermarriages* of the castes; the defective, or rather perverted, training of the mind from generation to generation; and, perhaps more than all, the drunkenness and dissipation of the class, to which almost every prisoner traces his violent crime and his moral degradation;—these are all factors in the deterioration of the criminal intellect. Into these and other causes I cannot now enter. But the most careful observation of the physical and psychical characteristics of the prisoners here, proves to me that they receive with their very life the seeds of death; their *ensemble* and their aspect is the forecast of the *facies Hippocratica;* and their physiognomy, in the majority of instances, is the index of mental imbecility. These potential causes help to explain the strange eccentricities and alienations of prisoners. To such applies forcibly what Esquirol states in his work, *Des Maladies Mentales:*—"There is a great amount of insanity and a morbid impulse, which the children of drunkards (and criminals) have no power of resisting."

Without having exhausted my proofs of the congenital imbecility of the criminals as a class, I must close this paper.

The foregoing statistics and statements go far towards demonstrating, if they do not establish, my proposition. The large proportion of the imbeciles are so on admission, or in the early months of imprisonment. Physical diseases of the nervous system give a large proportion of their mortality; and the testimony of prison officers is strong as to the prevalence among them of a low average intellect.

One or two corollaries flow necessarily from these facts, viz.:—That criminals, having a physical and moral heritage of nervous disorders and diseases, may be expected to develop increased mental imbecility under imprisonment; and when imbecility or insanity do supervene in prison, due weight ought to be given to the fact that the mind was probably enfeebled before imprisonment; and, further, if it is proved that criminals, as a class, are especially liable to mental maladies, the knowledge of it is of medico-legal importance in our courts of criminal jurisprudence.

(*To be continued.*)

## Article IV.—*On Irregularities of the Omo-Hyoid Muscle; with Remarks upon their bearings on the Surgical Anatomy of the Muscle.* By Wm. Turner, M.B. (Lond.), F.R.S.E., Senior Demonstrator of Anatomy, University of Edinburgh.

Of the different muscles situated at the side of the neck, next, perhaps, to the sterno-cleido-mastoid, the omo-hyoid possesses the greatest amount of interest to the student of regional anatomy. This is due to the mode in which it passes across the anterior and posterior triangular spaces, subdividing them into smaller triangles, and coming into close relation with the trunks of both the subclavian and common carotid arteries. From its position, with reference to these vessels, it is employed by the surgeon as one of the guides to the localities in which these arteries lie, in the cases in which he is called upon to apply a ligature around one or other of these vessels. Looking, then, at the anatomy of the muscle from this, the practical point of view, it becomes a matter of considerable interest to ascertain any deviations from its normal course and arrangement which may occur, and to determine, if possible, the proportion of cases in which they take place. For some time back I have been in the habit of recording in my note-book the different instances of irregularities of the muscle which came under my notice in the dissecting-rooms of the University; and I have now collected notes of 20 cases in which some considerable deviation, either in its course, arrangement, or points of attachment, was met with. It is not intended in the following remarks to give the details of the individual cases, for such a proceeding would be tedious, and not, perhaps, very profitable; but to class together those examples which present certain points in common, and to consider, with reference to them, the influence which they exercise upon the surgical anatomy of the muscle. During the period in which these 20 examples of irregularities of the omo-hyoid occurred, 373 subjects have been dissected in the rooms,—a number sufficiently large to found a general average upon, and which gives a ratio of between 5 and 6 per cent. This must not be considered as exhibiting an excessive proportion of cases, but is most probably rather under than over the mark, as, amongst so large a number of subjects, it is very likely that one or more may have presented irregularities of the muscle of some form or other, which, by being overlooked at the time, were omitted to be noted down.

As the omo-hyoid is naturally divided into two bellies, an anterior and a posterior, by an intervening tendon, it will be most convenient to class the irregularities of the muscle into two groups, viz.:—

1*st.* Irregularities of the posterior belly.

2*d.* Irregularities of the anterior belly.

Deviations from the normal arrangement of the posterior belly are more frequent than those of the anterior; for, of the 20 cases recorded, the posterior belly was affected in 17 instances, and of these, 11 occurred in female and 6 in male subjects. It must not be supposed from this, however, that the female is more liable to this form of muscular irregularity than the male, for the greater preponderance is due simply to the greater number of female subjects (nearly twice as many) which have been dissected; the proportion is, therefore, about equal in the two sexes. The departure from the normal arrangement of the muscle consists in the posterior belly assuming a connection to some portion or other of the clavicle. In 8 cases this clavicular attachment was found on both sides of the neck; in 4 cases, on the right side only; in 5 cases, on the left side. The part of the clavicle to which the muscle was attached was generally the inferior surface; in the greater number of instances it was connected to the middle third of this surface, next in frequency to the outer third; and very rarely, only one case, to the inner third, its insertion in this instance being concealed by the clavicular fibres of the sterno-mastoid. These do not include those constantly occurring cases where the cervical fascia binds down the muscle close to the clavicle, without any distinct attachment, however, taking place between them. This clavicular attachment of the posterior belly may be the only one that it possesses; so that the muscle may be said to arise from the clavicle, as was seen in 9 out of the 17 bodies in which an irregularity of the posterior belly was met with. The average proportion of cases in which the omo-hyoid possesses no scapular attachment whatever thus appears to be about 3 per cent., a number corresponding to that which had been previously pointed out by Mr Hallett in a paper on the varieties of the muscular system met with in the dissecting-room of the University of Edinburgh.[1]

It does not necessarily follow, however, that, when a connection to the clavicle exists, the normal scapular one is altogether absent; for, in 7 of the remaining cases the muscle possessed attachments to both bones, so that two distinct posterior bellies were present—the superior, longer one, extending backwards as far as the superior costa of the scapula; the inferior, shorter one, terminating in the inferior surface of the clavicle—a slight cellular interval generally separating these two bellies from each other. This form of the muscle, with its scapular, clavicular, and hyoid divisions, furnishes an illustration of a trigastric muscle. In one case, whilst the muscle on the right side possessed both a scapular and clavicular belly, on the left side it was connected only to the clavicle. It has been stated by some anatomists, that when the omo-hyoid muscle arises from the clavicle, the intermediate tendon is absent; but this I have not always found to be the case. It is certainly modified both in shape and size, so that a hasty inspection might lead to the supposition that it did not exist; but, if carefully looked for, it may generally be seen, though frequently reduced to a mere tendinous line.

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[1] *Edinburgh Medical and Surgical Journal*, July 1849.

The irregular clavicular origin of the muscle owes its importance to the influence which it exercises over the size of the postero-inferior triangular space of the neck; that is, of the region in which the third part of the subclavian artery lies, and into which the surgeon cuts when he applies a ligature around that portion of the vessel. The extent to which it modifies the size of this space depends partly upon the breadth and partly upon the position of the clavicular attachment. If the belly be broad and expanded, and at the same time connected to the middle third of the bone, then the postero-inferior triangle may be said to be entirely obliterated; so that the subclavian artery, instead of lying in the space between the posterior belly of the omo-hyoid and the clavicle, has the fibres of this muscle in front of it—*i.e.*, between it and the surface. In 13 of the 373 subjects examined, this obliteration of the subclavian triangle was met with; and the artery, where it emerged from beneath the outer margin of the scalenus anticus, was entirely covered over by the fibres of the posterior belly. In 10 of these cases this concealment was perfect, so that no part of the vessel could be seen until the muscle was divided and raised from its position. One of these cases presented an unusual arrangement, which is deserving of special notice. The clavicular fibres passed almost horizontally inwards, lying parallel to the clavicle, and beneath the sterno-mastoid joined the outer margin of the sterno-thyroid muscle, and along with it were connected to the posterior surface of the sternum. This occurred only on the left side, the right being perfectly normal. Hallett, in his paper on the varieties of the muscular system, refers to an instance of a similar nature which has been recorded by Sels. In the remaining 3 cases, partly owing to the artery having a highly arched course in the neck, and partly from the narrowness of the muscular belly, the vessel, although at first concealed, afterwards appeared at the root of the neck, above, and to the outer side of, the fibres of the muscle.

If, on the other hand, the posterior belly be connected to the acromial end of the clavicle, then the size of the space is but little interfered with, and the relations of the artery to the surface are not disturbed, unless at the same time the muscular fibres are closely tied down to the clavicle by the process of cervical fascia passing between them and the bone. Four of the 373 subjects exhibited this connection to the outer end of the clavicle. In the case already adverted to, where the posterior belly was attached to the sternal third of the clavicle, no portion of the omo-hyoid appeared in the posterior triangle; so that this great space presented no division into the larger occipital and smaller subclavian triangles generally met with.

Surgical writers, in describing the mode of performing the operation of ligaturing the third part of the subclavian, are in the habit of stating that the superficial structures at the side of the neck, immediately above the clavicle, should be cut through, so as to expose the posterior belly of the omo-hyoid, and that then the dissection should be cautiously pursued in the interval between this muscle and the clavicle until the artery is reached. It must be obvious that, when the muscle arises from the middle third of the clavicle, this rule cannot be carried out, but that to expose the artery division of the fibres of the muscle would be necessary. The operation would thus be rendered more complicated; for, in addition to one of the principal guides to the position of the vessel no longer existing in its proper place, a layer of muscular fibres is interposed between it and the surface. If, conjoined with this irregularity, the clavicle has a highly arched form, so as to add materially to the depth of the artery from the surface, or if the vessel itself, instead of the usual curve across the side of the neck, pursue an almost straight course, then other complexities would be added to the operation. An extensive connection either of the sterno-mastoid or trapezius muscle, or of both of them, to the clavicle, conjoined with that elevation of the clavicle which occurs when the aneurism of the axillary artery, for which the operation is usually performed, is situated at the upper part of the armpit, also add to the difficulties and dangers of the operation.

The number of cases in which this clavicular attachment of the omo-hyoid has now been seen to occur, and the influence which it exercises over the relational anatomy of the artery, call, I think, for a larger amount of attention at the hands of surgical anatomists than appears hitherto to have been accorded to it.

2*d*. Irregularities of the anterior belly.

Deviations from the normal arrangement of the anterior belly are neither so frequent nor so important as those of the posterior. Of the numerous subjects examined, not more than 5 presented examples of any noteworthy irregularity; 2 of these were conjoined with a clavicular attachment of the posterior belly; in the remaining 3 the posterior belly was perfectly normal. In 4 out of the 5 cases the anterior belly became blended by its inner border with the adjacent margin of the sterno-hyoid muscle, so that it appeared to form with it a single undivided plane of fibres. This intimate union of the two muscles was generally accompanied by a peculiar condition of the sterno-hyoid, a fibrous band extending from the intermediate tendon of the omo-hyoid so as to divide the sterno-hyoid into two portions, an upper and a lower. The existence of such an arrangement has given rise to the statement made by some anatomists, that the anterior belly of the omo-hyoid is occasionally absent; but I am rather inclined to consider that a blending of its fibres with the sterno-hyoid occurs, than that there is a deficiency of this division of the muscle.

The size of the carotid part of the anterior triangular space of the neck did not appear to be essentially altered in these cases: for the muscular plane, formed by the junction of the two muscles in question, was not, as a general rule, more extended than would have been the case if no such union had taken place. In only one subject did I see the muscles so broad as to lie over a larger part of the common carotid trunk than is customary with them; in this case, as if to compensate for such an arrangement, the bifurcation of the artery took place on a level with the great cornu of the hyoid bone. This mode of deviation from the normal anatomy of the anterior belly of the omo-hyoid muscle, consequently, does not materially affect the surgical anatomy of the common carotid artery.

## ARTICLE V.—*On an Epidemic of Typhus in the North-West Provinces of India.* By WILLIAM WALKER, M.D., Assistant-Surgeon, Her Majesty's Indian Army.

THE subject of the following remarks, although of peculiar interest and importance to the profession in India, is not altogether unworthy of the attention of every student of disease. Till within a very few years, the idea of typhus fever occurring in India was ignored by most physicians, and passed over in silence by systematic writers on the diseases of the country. Annesely, in his work, does not allude to it; Dr Morehead, in his *Researches on Disease in India*, states positively that typhus, typhoid, and relapsing fevers are unknown; and Johnson and Martin, while they allow that typhus may, and occasionally does, occur in India, yet deem "the climate extremely unfavourable to the existence and perpetuation of typhus contagion." Since 1856, however, not a few isolated cases of pure typhoid, or, more properly, enteric fever, have been recorded in the *Indian Annals of Medical Science.* Dr Ewart of Ajmere, Dr Scriven of the Presidency General Hospital, Drs Goodeve and Payne, have all contributed cases, proving incontestably that this disease does occur within the tropics,—more frequently, perhaps, in the climates of the hills, but often enough in the plains to give it claim to a place among the diseases of India.

The writers above referred to have described cases of pure enteric fever. The epidemic regarding which I wish to place on record a few observations, appeared to me one of pure typhus, with peculiarities incident to the constitutions of the natives and the circumstances under which most of the observed cases occurred.

It is much to be regretted that the general population of the towns and villages of the East are reached with so much difficulty in matters pertaining to their inner and social life. No vital statistics derived from the native officials are even approximately correct; consequently, when disease is rife amongst the community, we are compelled to fall back for reliable information on the registered and isolated groups of men inhabiting our jails and regimental lines.

The obvious result of this is, that, in the case of the jails, our observations are based on constitutions the least able to bear up against epidemic influences; while in a regiment we see the effects on men placed in the most favourable circumstances to resist such attacks. As for the pathology of any particular affection, we are indebted almost entirely to observations made on the bodies of prisoners, as it is next to impossible to overcome the prejudices of the free natives against allowing the bodies of their relatives to be opened.

Had the epidemic we are now considering been localized, or had it been confined exclusively to the prisons of the North-West Provinces, we might have been justified in attributing its origin to some local or special conditions. Into this question I am not disposed to enter at length. I shall point out presently the apparent starting-point of the epidemic, from whence it developed and spread itself slowly. I shall show that during the cold months of January and February of this year it was kept in check, until, with the returning heats of spring, it burst forth with great virulence, and at once, in districts hundreds of miles apart, amongst the free population, amongst the prisoners in our jails, and amongst our native troops. Its history, equally with its peculiar symptoms, will be seen to separate it from the ordinary malarious fevers of the tropics.

My own experience of the epidemic was confined to the inmates of the Central Prison at Agra; and from the cases coming under my own eye I have drawn the details of this paper. I shall not hesitate, however, to quote from the statistics furnished by other medical officers, and to draw from their descriptions of the disease such supplementary remarks as may serve to illustrate its character.

It appears that, so far back as June 1859, typhus fever made its appearance in an epidemic form in and around Saugor, in Central India. In an able communication from Dr Rice, the Civil Surgeon of Saugor, I find the following:—"In June 1859 I noticed that typhoid fever was very common among the military police. I recognised the disease, and returned every case as 'continued fever.' It was not until August that I had an opportunity of seeing it in the city and cantonment Bazaar, where for that month it had been killing every third man. The villages of the district, all remarkable for their filth and swampy condition, had been depopulated; and there are the most reasonable grounds, short of an actual census, for believing that the greater proportion of them lost half their population."

Here, then, we seem to have the starting-point and focus of the epidemic; at all events, Saugor is the first point at which I have been able to trace fever of a type, as I shall subsequently show, identical with that which reached Agra in the following year. It is to be regretted that Dr Rice's observations did not include any dissections of fatal cases. The epidemic did not attack the prisoners in the jail; and, as I have noted above, the insuperable objections of the general population preclude any examination being made in a case of death from ordinary disease, where no judicial object is to be served.

Keeping the main road from Central India towards the Ganges, we find the disease next showed itself at Mirzapore. Here, also, the jail was exempt from an attack; but the fever raged in the surrounding district with considerable violence. The Civil Surgeon, Dr Loch, did not have any cases under his immediate observation. He writes:—"As far as I could ascertain, it was a very severe type of quartan fever, accompanied by great determination of blood to the head." The civil officer then in charge of the district states that the natives died in from five to seven days; and I think I am justified in believing that, had any cases of the fever been throughout under Dr Loch's observation, he would have seen reason to recognise a type of fever quite distinct from any form of malarious origin with which we are acquainted.

Passing eastward, it next appeared at Ghazeepore, and is thus noticed by the Civil Surgeon, Dr Garden, in a Special Report on the jail of that station:—"The fever that occurred in the jail during October, November, and December 1859, and January 1860, would hardly claim attention for itself on any ground, excepting, perhaps, the greatly increased number of admissions, were it not for its evident connection with that which consentaneously raged throughout the whole of this and neighbouring districts, and which, assuming a typhoid form, proved fatal to a most fearful extent." Farther on in Dr Garden's Report I find it stated, that out of 171 admissions under the head of Fever, 9 deaths only are noted as occurring from the fever, while 43 are mentioned as dying from other causes consecutive to the fever, chiefly "pneumonia and other affections of the lung." Now, there can be no doubt that these consecutive diseases were the sequelæ of the fever, assuming its congestive features so gravely as to lead the physician to regard the case as a special inflammation of whatever viscus was most seriously implicated. Still, whether those cases be regarded as having terminated fatally from an intercurrent inflammation or not, there is no room to question that the very prevalence of these fatal complications gives a peculiar character to the fever, and is a strong connecting link between the disease as it came under Dr Garden's observation, and as it subsequently showed itself in other parts of the country.

Proceeding onwards in its destructive course, the epidemic swept over the provinces of Behar and Benares, causing so fearful a mortality, that, according to the Civil Surgeon of Benares, "few families altogether escaped, and for the time the population generally seemed prostrated by the extent of its inroads." The large jail in the station of Benares seems fortunately to have escaped the prevailing type of disease; hence the Civil Surgeon, Dr Naismith, although recognising the epidemic intensity of the fever amongst the free population, and its destructive character, "either by assuming typhoid and congestive features, or by inducing splenic cachexia and visceral disease," is inclined to give a local origin to the affection itself. I find him writing:—"This outbreak of fever was the sequel and, in my opinion, the effect of a late and heavy fall of rain, which lasted for several days, during the month of October 1839." While giving all due weight to Dr Naismith's opinion on this point, I hesitate to regard this late fall of rain as sufficient in itself to produce a type of fever so distinct in its features, so widespread and fatal in its results; while, at the same time, it must be remembered that the Benares epidemic does not stand alone, and cannot be regarded as isolated from the epidemic that preceded it in Saugor, and followed in its steps in other portions of the North-West Provinces, as soon as the heat of the season supplied the conditions requisite for its rapid development.

While the fever was raging in the provinces to the south and east, the cold weather supervened in the north-western districts; and the disease, although by no means extinguished, had its spread and development temporarily arrested. In almost every station situated in the tract of country lying between the Ganges and the Jumna, isolated cases were reported during the early months of the year; but it was only gathering strength for its final ravages in the warm months of spring. The Civil Surgeons of Mynpoory, Allyghur, and Futtyghur, all had occasion to remark the occurrence of one or two cases amongst the military police under their care during February and March; and each independently came to the conclusion that it was true typhus with which they had to deal.

Having thus far traced the history of the affection, and its progress from Central India eastwards to the banks of the Ganges, and northwards through the country lying between the Ganges and the Jumna, I shall now, from my own experience, detail its symptoms and characteristic features when fully developed during the months of March, April, and May.

Towards the end of February several cases of fever in my hospital assumed what I considered to be a congestive remittent type, with the remissions so slightly marked as to pass unnoticed. Several of these cases terminated fatally. So unusual is it to meet with continued fevers amongst the natives of India, that it was only after some time that I was constrained to recognise, from its many peculiar features, an unwonted form of fever, and began to enter the cases in my Hospital Register under the head of Typhoid Continued Fever.

So early as the beginning of March the effects on my hospital establishment and attendants proved to me that the affection was contagious, and caused me to institute measures accordingly. Into the details of these measures I need not enter: in the main, they were directed towards relieving the prison of its inmates by encamping them out or by transference to neighbouring small jails, and this chiefly with the object of converting the convict sleeping barracks into hospital wards; thus scattering the affected over a large space, and diluting the fever poison.

To avoid repetition, and to show clearly the distinctive features of the fever, I shall give a short sketch of the most usual course it took, adding any supplementary remarks that may be necessary on exceptional symptoms and complications. I do not mean it to be understood that every symptom detailed in this general outline occurred in every case, but they were all to be found in every small group of cases.

Two-thirds of the men coming under treatment asserted that their illness commenced with a shivering fit. While acknowledging the truth of this statement as regards the apparent initiatory symptom, I have good reason to believe that in most cases a previous period of malaise was passed through, either unobserved by the men themselves, or, when the disease became so fatal, concealed by them to avoid being sent to hospital. Besides the evidence on this head gathered from the gangsmen, the rapidity with which great bodily weakness supervened points to a period during which the fever poison had been lurking in the system and depressing the vital energies. When the shivering attack came on during the night, the men were hardly able in the morning to walk to hospital, and never able to carry their own bedding. The expression of their faces rapidly altered; they looked wearied, listless, and unconcerned, and were already possessed with the idea that they would never recover from the disease. In strong men, the countenance was at first full and flushed, the veins protruding from the forehead, and the eyes suffused, or even bloodshot. Headache was by no means a constant symptom, but, when present, was complained of across the forehead. Pains in the back and limbs were constant and severe. The skin was hot, dry, and pungent; the pulse at first full and bounding, and varying from 110 to 130 in frequency. The tongue, after a few hours, became covered in the centre with a dry, white fur, the edges and tip becoming bright red; in a few cases it remained dry and glazed, but without fur, throughout the attack; acquiring a dark brown line down the centre as the disease advanced, and becoming a little furred on the approach of convalescence. Vomiting occurred in many cases in the early stages; very often the belly was or became tense and swollen, with considerable tenderness in the epigastrium. The bowels were for the most part constipated; but a slight purgative was often sufficient to set up uncontrollable diarrhœa. The urine was scanty and high-coloured, passed with considerable difficulty, and often completely retained. Throughout the epidemic the respiratory organs were much affected; mostly so, however, at its commencement in the month of March. At that time scarcely a case came into hospital without showing this complication most violently.

The nervous centres rarely became affected for the first three or four days, but the muscular depression increased hourly. The men lay on their backs with outstretched limbs, unwilling or unable to move; the hand, when raised, shook, and could with difficulty be directed to the wished-for position; the tongue was protruded tremulously and with apparent effort. By-and-bye the functions of the brain begin to be impaired. The patient lies dozing uneasily; his eyelids are closed, but he does not sleep; if you forcibly open them, he complains, and turns his head away from the light, and you can see that his pupils are fixed, sometimes contracted, sometimes dilated. At a still later period you require to shake him and speak sharply to attract his attention; but even then he would answer rationally, only he is unwilling to be disturbed, and lapses again into the same dozing state. About the fifth day he gets rapidly worse; he is incapable of the slightest muscular exertion, and slips down off his bedding on to the centre pathway of the hospital; his pulse becomes hourly smaller, weaker, and more rapid; sordes collect about his teeth and gums; his tongue becomes dry and baked, the fur browns and cracks, but does not thicken much; his throat is so parched that he is made to swallow with the greatest difficulty; he loses his voice, and speaks only in a whisper; he complains of no pain. Gradually low muttering delirium supervenes; he becomes insensible to all surrounding objects, and cannot be roused; passes his stools involuntarily, and dies comatose.

The above is a rough sketch of the course which a majority of the fatal cases ran. With the few exceptions of men who died within 48 hours after their admission into hospital, the crisis of the disease occurred on the fifth, seventh, or ninth day. At those periods, either the patient's system was overpowered by the disease, and he died comatose; or the fever left him, and he became convalescent. Usually there was no marked crisis; sometimes an increased flow of urine, less frequently a profuse perspiration, but very often an increased discharge from the bowels. Neither the patient nor his attendants could tell exactly at what time the fever left him. Within a couple of hours his skin became soft and slightly moist, from being hard, dry, and pungent; his pulse lowered in rapidity, and became soft; his tongue and mouth moistened; he complained less of thirst and dryness of throat. His countenance in a few hours became quite altered. Instead of the restless, twitching irritability of his roused condition, and the dull, listless quiet in which he lay when undisturbed, his face became quiet, relaxed, and placid; his eyes were opened, and tolerant of light; he lay on his back equally helpless as before, but, beyond weakness and a feeling of being bruised all over, he declared himself well.

Often the cases now went on well, and the men acquired strength day by day; but in a large number, after the third or fourth day of convalescence, a change occurred. This arose sometimes, no doubt, from indiscretion on the part of the patient, but more frequently from the imperfect elimination of the morbific matter from the system. All the former symptoms return with increased violence; the tongue, which had been moist and gradually cleaning, becomes again dry and fissured, fur collects and thickens, and a brown crust forms rapidly. All the typhoid symptoms are intensified: the dry, pungent heat of the skin; the small, quick, thready pulse; the restless, semi-delirious wakefulness; and, finally, the cold, clammy sweat that ushers in the quiet of coma.

If the patient lived over 48 hours of the relapse, nature seemed to make an effort to throw off the poison by a profuse discharge from the bowels. At first he passed large quantities of dark gravelly-looking fæces, with a most offensive odour; this rapidly changed to shreds of mucus, floating in slime and streaked with blood, and often to pure blood. Although several cases rallied on the occurrence of this discharge, they generally perished subsequently from chronic dysentery.

Four or five cases exhibited features so distinct from any detailed above, that they demand separate notice. With them, after the fever had lasted from 24 to 48 hours, all the symptoms seemed to subside; the patient's skin became quite cool; his pulse quiet and soft; his breathing easy and natural. He lay on his back, and complained of nothing; only his unnaturally quiet condition attracted attention. His eyelids remained closed, but the eye had no intolerance of light; the pupils were either contracted, or dilated and fixed. He could answer questions when roused, but did so very unwillingly. The patient usually lay in this state during three or four days without taking food, and at last passed quietly from sleep into death. The *post-mortem* examinations in these cases revealed serous effusion to a great extent in the ventricles and under the pia mater of the brain.

In a few cases the disease was so rapidly fatal that the men died in a few hours; the blood-poison seemed instantaneously to overpower the nervous system. These extreme cases were met with mostly amongst the hospital attendants—strong, vigorous men, but who were of necessity much exposed to the contagion. The attack in this form was often ushered in by intense nausea and reaching; but none of the men complained of tenderness on pressure over the epigastrium, indicating that the cause of the vomiting and nausea lay in the cerebrum. Nine men died within 24 hours, and 14 men within 48 hours, of their coming under observation.

Before passing on to consider the sequelæ of the disease, I may advert here to an observation having reference to the sequence in which the prime characteristic of the epidemic—namely, congestions of the internal organs—occurred. In the end of February and the early part of March my attention was attracted chiefly to the respiratory organs. All the symptoms pointed to the lungs as deeply involved in mischief: wheezing and hissing sounds were to be heard all over the chest; and the *post-mortem* examinations, as will be seen, sustained the diagnosis. Taking into consideration that at the time the mean daily range of temperature was 36·4, the prominence of the lung affection was scarcely to be wondered at. After the second week in March the lung complication lessened, or, at all events, became shrouded in the more imminent danger arising from brain congestion. This vascular congestion, with the serous and even apoplectic effusions in the head, were combated with the utmost difficulty. This marked pre-eminence of head disturbance, in its turn, yielded to another group of symptoms originating in congestions of the abdominal organs, more especially of the liver and mucous membrane of the bowels. This additional complication occurred after the first week in April, and continued, with greater or less prominence, until the fever began to abate in the end of May. Pain was complained of on pressure over the right hypochondrium and epigastrium; a jaundice tinge of the conjunctivæ and of the various secretions was oftener visible; abdominal tenderness and tympanitis were more common; and hiccup, sometimes uncontrollable, accompanied or succeeded to sharp attacks of diarrhœa or dysentery.

By far the most common sequela of the fever was dysentery or dysenteric diarrhœa. In a few cases this showed itself very early, and rapidly carried off the patient; but most commonly it did not arise until after some days of convalescence, and seemed to have its origin in that flux from the bowels that occurred frequently at the crisis of the case. The *post-mortem* appearances varied with the stage at which the patient died; but in no respect did the state of the mucous membrane differ from what is ordinarily observed in cases of idiopathic dysentery. I need only mention that, out of 299 deaths resulting from the epidemic, 76 were occasioned by the subsequent diarrhœa, to show how very prevalent and fatal this complication proved. In the general congestion of the internal viscera which accompanied the fever, the respiratory organs suffered severely, and had in many cases laid in them the foundation of disease that could not but terminate unfavourably. Sometimes low pneumonia supervened, and the patients lingered on for a long time, and appeared to perish of debility and general malaise. In six of these cases which I examined after death, grey hepatization was found in a portion or the whole of one lung. Confirmed phthisis has resulted in five cases; and I have no doubt that in many others tubercular deposits have taken place, which will, sooner or later, carry them to their graves. Swelling of the parotid gland occurred very frequently at the crisis of the fever. Twenty-six marked cases came under my observation; and many other patients complained of pains and stiffness in the parotid region, of whom I took no note. Of the 26 cases, 10 resulted in suppuration; in the rest the swelling gradually resolved itself under remedial measures. Erysipelas of the head followed the parotideal swellings in 4 cases, 2 of which proved fatal; while 2 of the cases in which suppuration occurred died from exhaustion. Permanent weakness of mind resulted from the fever in 1 case. Chronic rheumatic pains of the limbs and œdema of the lower extremities have been of frequent occurrence, and very intractable.

On the treatment pursued I have very few remarks to make. Most usually the patient's bowels had to be opened by 4 or 5 grains of calomel, succeeded by a senna draught; subsequently they were regulated by castor-oil or warm water enemata. Quinine I found to be positively injurious until convalescence had commenced, when it became invaluable as a powerful tonic. Small doses of mercurials, with James's or Dover's powder; tartar emetic with laudanum; diaphoretics and diuretics, were all employed. Early in the attack I had often to resort to leeching and cupping, directed to whatever organ was most involved in congestion; but the stage suited to antiphlogistic treatment never lasted long,—a strong tendency to depression, with dry, brown tongue and feeble pulse, rapidly supervened. Then it was that the want of vital power in the convict constitution manifested itself: strong soup by the mouth or by injection, with the most powerful stimulants, were necessary to keep the vital spark alive through the struggle that followed.

Subsequent complications had to be treated by specific means, but it is unnecessary to enter into all the details.

I found convalescence tedious in almost every case, even where no relapse had occurred. Great weakness of the digestive powers, constant vomiting after meals, irregularity of the bowels and the passage of undigested food, indicated, by their persistence, the great shock which the men's constitutions had sustained. Many months elapsed before they were fit to be removed from the convalescent gangs.

The *post-mortem* appearances in all the fatal cases which I examined had one common characteristic, that of great congestion of almost all the internal viscera. To appreciate this, it is only necessary to glance at the analysis of the examination of 104 bodies, all made within six hours after death (*see* Appendix A). I examined the head in 58 of those cases, and found the brain healthy in 12, much congested in 32, having serous effusion in considerable quantity in 6, and apoplectic effusions in 12. In the last the blood was in every case effused under the pia mater, and spread over the cerebral convolutions in a thin layer. In 5 cases I found the lungs healthy; in 61 they were congested; in 32, much engorged; and in 6, one, or a portion of one lung, was hepatized. The liver was healthy in only 3 cases; in 63 it was dark in colour, and gorged with blood; in 37 it was softened, and of some shade of yellow in colour; in 1 case it was small, hard, and contracted. The gall-bladder was empty in 32 cases, full in 70, and engorged in only 2. The spleen was healthy in 66 cases, enlarged and engorged in 28, small and hard in 10. The kidneys were normal in 53 cases, highly congested in 31, and otherwise diseased and degenerated in 20. The mucous membrane of the colon was congested generally in 37 cases, and showed ulceration in some part of its course in 28; in the others it was healthy. In 23 out of those 104 cases a general jaundice tinge was observable after death, although in only 8 of them the conjunctivæ were affected during treatment.

In about 20 cases I examined the whole extent of the intestine, but could detect no disease in the small gut further than sometimes a slight general congestion of the mucous membrane. The solitary glands and Payer's patches were in a natural condition; so, also, were the glands of the mesentery. It would have been more satisfactory to have carried out this investigation in all the bodies opened; but the difficulties that had to be contended against in the heat of an Indian May, with an hospital establishment disorganized by the prevailing disease, led me to rest satisfied with noting the condition of the principal organs, the more especially as, in the cases I did examine, no lesions of particular glands were observed.

In addition to these 104 cases, I have collected notes, in some respects imperfect, of the appearances remarked in 278 bodies examined by the medical officers in charge of the Meerut, Allahabad, and Ghazeepore jails. The pathological appearances are almost identical with those I have already mentioned, and I shall content myself with giving a short analysis of them. In 120 out of the 278 the scalp and brain were much congested. Serous effusion had taken place in 125 cases. The lungs were reported healthy in 32 cases, congested in 160, engorged in 83, and hepatized in 14. The liver was found dark and engorged in 156 cases; soft, and of some shade of yellow, in 42; small and contracted in 12. The spleen was remarked as healthy in 12, enlarged and congested in 262, and small and contracted in 3 cases. The kidneys were healthy in 48 cases, congested in 35, and otherwise diseased in 28. The stomach and duodenum were found congested in 28 cases. The large bowel was congested in 19 cases, and contained ulcers in 24. A general jaundice tinge of the surface was observed in 59 cases.

I need scarcely remark on the evidence to be drawn from these observations as to the identity of the epidemic all over the country. Taking this in connection with the symptoms of the affection, the character of its sequelæ, and its marked contagious power, we have a type of fever such as has never been met with in an epidemic form in this country, and, as I believe, identical with true typhus in the temperate zone. Its epidemic prevalence, the character of the initiatory symptoms, the intense pungent heat of the skin, the great muscular depression, the state of the tongue and bowels, the acute brain symptoms, the absence of any peculiar morbid condition of the intestinal glands, and the almost universal presence of congestion in the viscera, are conditions common to both affections. I examined every case with intense interest, to discover any appearance of the cutaneous rash peculiar to true typhus; and, although I failed to detect it, I do not think myself justified in denying its presence. Such an eruption would be observed with the utmost difficulty on the swarthy skin of an East Indian; and its apparent absence is of less importance when all the other symptoms point so distinctly to the peculiar type of fever.

A few words will dispose of the question of the contagious power of the fever—a characteristic which of itself removes this epidemic from being classed with ordinary malarious fevers. At the commencement of the outburst I had four native doctors attached to my hospital; they were all, within three weeks, lying in the jaws of death. Of seven others sent to do duty, only three escaped. In the case of the convicts attending on the sick in hospital the result was still more marked. During the epidemic, 326 men were entered on the books as attendants on the sick. Of these, 221 caught the fever, and 56 died; that is, they were attacked in the proportion of 68·2 per cent., and 25·3 per cent. died. At one time I thought to mend matters by changing the whole gang of attendants after seven days' duty; but my first experiment proved that, even during that short period, the fever-poison had permeated their systems, and only waited for sufficient time to develop itself. On the 23d March I relieved, experimentally, 57 men from hospital duty, and sent them out into a standing camp some miles distant. They were, at the time of their removal, all apparently healthy, and they were placed at once in the most favourable circumstances for retaining their health. No one fell sick up to the 29th; but, from that date up to the 9th April, no fewer than 28 out of the 57 men were sent into the main hospital with bad attacks of the fever. To give one instance more: out of 12 turnkeys employed in the hospital wards, no fewer than 7 suffered from the fever, and 1 died.

Before concluding, I have one or two remarks to offer on the general rate of mortality amongst the men under my care. 88·6 per cent. of them had attacks of the fever, and the ratio of deaths to treated was 14·7 per cent. The rate, as might have been expected, was not uniform amongst the different castes. For example, the sickness was greatest amongst the Hindoos; whilst the mortality was highest amongst the Mohammedans—the former dying in the ratio of 12·5 per cent. of those attacked, while the death-rate of the latter ran up as high as 17 per cent. For further details on this point I would refer to the analysis to be found in Appendix D.

Besides the tabular statements I have referred to, I thought it might be useful to add one or two others, which find a place in the Appendices. Appendix B is an analysis of the fatal cases, with respect to the age and duration of imprisonment of the men. Appendix C gives the result of my observations as to the period at which death took place in 229 cases, not including those men who died of the sequelæ of the fever. And, in Appendix E, I have added an abstract of the Meteorological Register kept up in connection with the prison.

## APPENDIX A.

### ANALYSIS OF POST-MORTEM EXAMINATIONS IN 104 FEVER CASES.

| Total Number. | Scalp and brain congested. | Serous effusions in brain. | Apoplectic effusions in brain. | Lungs healthy. | Lungs congested. | Lungs engorged. | Lungs hepatized. | Liver healthy. | Liver dark and engorged. | Liver yellow and soft. | Liver small and contracted. | Gall-bladder empty. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 104 | 32 | 6 | 8 | 5 | 61 | 32 | 6 | 3 | 63 | 37 | 1 | 32 |
| | Gall-bladder full. | Gall-bladder engorged. | Spleen healthy. | Spleen engorged and enlarged. | Spleen small and contracted. | Kidneys healthy. | Kidneys congested. | Kidneys otherwise diseased. | Stomach and duodenum congested. | Large bowel congested. | Large bowel ulcerated. | General jaundice tint. |
| | 70 | 2 | 66 | 28 | 10 | 53 | 31 | 20 | 2 | 37 | 28 | 23 |

## APPENDIX B.

### ANALYSIS OF AGE AND DURATION OF IMPRISONMENT IN 229 FATAL CASES OF FEVER.

| Period of Life. | | | | | | Duration of Imprisonment. | | | | | | | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Under 20. | Under 30. | Under 40. | Under 50. | Under 60. | Under 70. | Under One Year. | Under 2. | Under 3. | Under 4. | Under 5. | Under 6. | Under 7. | |
| 4 | 84 | 60 | 37 | 25 | 19 | 103 | 79 | 36 | 4 | 4 | 1 | 2 | 229 |

## APPENDIX C.

### PERIOD AT WHICH DEATH TOOK PLACE IN 229 FATAL CASES OF FEVER.

| Died. | | | | | | | | | | | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Within 24 hours. | Within 48 hours. | Within 3 days. | Within 4 days. | Within 5 days. | Within 6 days. | Within 7 days. | Within 8 days. | Within 9 days. | Within 10 days. | Over 10 and within 15 days. | |
| 9 | 14 | 32 | 22 | 28 | 28 | 16 | 16 | 6 | 5 | 53 | 229 |

## APPENDIX D.

PER-CENTAGE OF SICKNESS AND DEATH-RATE COMPARED IN DIFFERENT CLASSES.

| Hindoos of Castes not usually Flesh-eaters. | | Hindoos of Castes usually Flesh-eaters. | | Mohammedans | | Night-soil Men by Caste and Occupation. | | Total. | |
|---|---|---|---|---|---|---|---|---|---|
| Sick. | Died. | Sick. | Died. | Sick. | Died. | Sick. | Died. | Sick. | Died. |
| 89·2 per cent. | 18·6 per cent. | 90·2 per cent. | 12·5 per cent. | 81·3 per cent. | 17 per cent. | 91·1 per cent. | 30·5 per cent. | 88·6 per cent. | 14·7 per cent. |

## APPENDIX E.

ABSTRACT OF METEOROLOGICAL OBSERVATIONS TAKEN AT AGRA DURING THE FEVER EPIDEMIC OF 1860.

| Month. | Mean Temperature of Air. | Mean Daily Range of Temperature. | Mean Temperature of Dew-point. | Mean Temperature of Evaporation. | Mean amount of Cloud. | Mean amount of Ozone. | Prevalent Winds. | Electrical Dis-charges not Thunder-storms. | Amount of Rain. |
|---|---|---|---|---|---|---|---|---|---|
| February, | 68·9 | 31· | 52·5 | 51·8 | 3·5 | 2·3 | N. & N.W. | 5 | 2 slight showers. |
| March, | 81·0 | 36·4 | 40·5 | 56·9 | 0·7 | 0·7 | N.W. | 1 | Do. Do. |
| April, | 91·4 | 39·1 | 50·2 | 61·6 | 1·1 | 0·02 | N.W. | 1 | None. |
| May, | 95·1 | 32·8 | 48·9 | 66· | 1·6 | 0·4 | N.W. | 4 | None. |
| June, | 97·1 | 29·4 | 56·2 | 71·9 | 3·05 | 1·3 | N.W. & E. | 3 | 1 inch. |

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## ARTICLE VI.—*On the Treatment of Fracture of the Lower Extremity of the Radius.*

By ALEXANDER GORDON, M.D., L.R.C.S. Ed., Professor of Surgery, Queen's College, Belfast, and Surgeon to the Belfast General Hospital.

OF all the bones of the body, none is so frequently fractured as the radius. The fracture usually occurs at, or about an inch above, its carpal end. I believe fractures of this bone, in this situation, are almost as frequent as all the other fractures conjoined. This fact renders any attempt to improve the treatment at present pursued deserving of serious consideration, especially because that accident frequently entails much suffering, often great impairment of the functions and structure of the wrist-joint, and often happens in persons whose subsistence depends mainly upon manual labour.

I have no hesitation whatever in stating that the methods of treatment which have been hitherto pursued in this common accident have failed. I do not mean to assert that they have not been beneficial. I acknowledge that the functions of the limb, in many cases, have been almost perfectly restored, and the amount of subsequent deformity very much diminished. I do, however, affirm that they do not afford such a solid support to the radius as is requisite for the restoration of its natural form; nor, if the form be restored by coaptation, will they maintain it until firm osseous union has taken place. The main cause of failure has been the imperfect adaptation of splints to the shape of the forearm. When the forearm is supine, the external border of the carpal end of the radius looks directly outwards, and is on the outer border of the forearm; above, at the elbow-joint, the external border of the forearm is formed by the supinator and extensor muscles, the head of the radius occupying nearly the centre of the posterior surface. When the hand is prone, the carpal border of the radius, which in supination looked outwards, is now directed inwards, the position of the head of the radius being unchanged. If we now look at the radius, and trace its course, we shall find it as we ascend to pass from the inner to the posterior aspect of the forearm. If we now place a narrow pad along the front of the forearm, and over this a splint, it will be quite evident that pressure thus made is chiefly sustained by the muscles in the centre of the forearm, and that the radius is very imperfectly supported, and especially at the part where it is most frequently broken. These reflections led me to adopt the mode of treatment which I shall presently describe.

The fracture is usually transverse, and both fragments—that is, the upper end of the lower fragment, and the lower end of the upper fragment—are displaced forwards and inwards. Of this double displacement, I regard the inward as of secondary importance, because, if we counteract the forward displacement, the fragments, in resuming their natural position, will incline outwards; just in the same way as a straight or slightly curved piece of wood, when broken, with the fragments still in apposition, will resume its straight or slightly curved form when the deflection is counteracted. This fact, I think, has probably been too much overlooked hitherto in the treatment of this very common fracture; and hence too much importance has been attached to the necessity for counteracting the action of the pronator quadratus and other muscles by maintaining the hand in a state of adduction. Adduct the hand as we may, the deformity and its consequences will persist, if the forward displacement be not thoroughly rectified.

The practice hitherto adopted may be said briefly to have consisted of the application of a pad resting against the palmar surface of the forearm, extending as far as, or below, the lower end of the upper fragment, and supported by a splint; of graduated compresses upon the posterior surface of the carpal fragment and carpus, and over these of a straight or pistol-shaped splint, and of adduction of the hand. Dupuytren applied the ordinary apparatus for fractures of the forearm, and relied chiefly upon an ulnar splint, to which the hand was held adducted, evidently overlooking the main displacement forwards.

Nelaton applies a compress, doubled at its lower end, so as to form a thick border, which he places immediately above the lower end of the upper fragment, and over that a splint, which extends beyond it, leaving between this splint and the lower end of the forearm a space which corresponds to the lower fragment; in fact, on the palmar surface of the lower fragment there is no pressure exerted. Posteriorly, however, he places across the posterior surface of the carpus and the carpal fragment of the radius two or three graduated compresses, of a wedge shape, with the base directed outwards, and over these a splint. Thus, according to Nelaton's plan, the lower end of the upper fragment is pushed backwards by the palmar compress and splint, whilst the carpus and carpal end of the lower fragment are pushed forwards, and inclined towards pronation.

A little reflection will show us, especially when we examine attentively the conformation of the forearm, when placed midway between pronation and supination, that any pad applied in front, and covered with a splint, will exercise its chief pressure along the centre of the forearm, and will not be sufficiently oblique to restore or maintain fully and effectually the concavity of the radius.

Fig. 1.

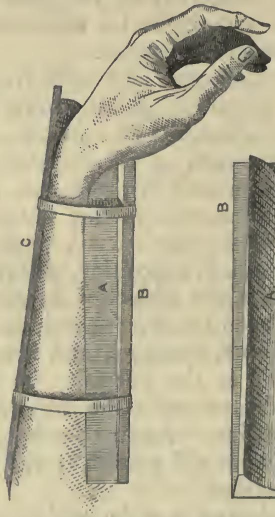

Fig. 2.

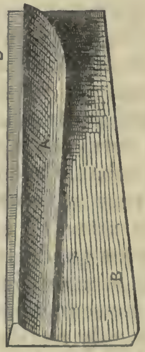

Fig. 1. A, the bevelled piece of the splint applied to the radius. B, the margin of its body projecting outwards and protecting the radius from pressure. C, the dorsal splint or pad.

Fig. 2. A shows the form of the bevelled portion; inferiorly it is convex from without inwards, and from before backwards. B, the body of the splint.

The splint which I use has attached to its radial border a piece of wood, so bevelled that it fills up and fits accurately the natural concavity of the radius. The fracture renders the palmar surface of the radius convex, instead of being concave, its normal form. The surface of the attached piece of the splint is also convex, and covered with tow, a piece of spongio piline (the best material), or some other soft substance. The splint being thus covered, is then applied to the forearm. The convexities of the splint and radius are mutually brought into apposition; about half an inch, or perhaps a little more, of the lower end of the radius, is unsupported, because of the alteration in its form. A thick pad, similar to that used by Nelaton, is now applied over the posterior surface of the carpal fragment of the radius and carpus, and over this a splint, extending from the upper and back parts of forearm to the metacarpus.

The action is very simple. The radius, at the seat of fracture, is convex, instead of being concave; the convexity of the splint is pressed against the convexity of the radius. The lower ends of the carpal fragment, the carpus and metacarpus being inclined unnaturally backwards, are pressed towards the palmar surface, acting as a lever, whose fulcrum is the convexity of the radius. The displacement forwards of the radius gradually yields; and if the pressure by the bandages be cautiously and continuously maintained, the convexity of the splint slowly and steadily forces the displaced fragments backwards, until at last the convexity of the splint rests in the concavity of the radius; and just as the inclination forwards of the fragments disappears, so does the displacements inwards; and so perfectly does the radius regain its normal form, that, in most cases, it would be difficult to detect the seat of fracture. In one case, I tried in how short a time the splint would reduce the deformity under pressure from straps and buckles. The patient was a boy, 13 years of age, who " had sprained his wrist" nearly three weeks previously. The inclination forwards was even greater than usual. The splint was applied at 10 o'clock A.M.; at 8 o'clock P.M. of the same day, the straps were tightened by one of the resident pupils of the General Hospital: the patient, in the meantime, made no complaint of pain; and on the following morning the radius had regained its shape perfectly. Yet I do not recommend that the correction of the deformity should be left to the splint and pressure alone. I merely mention it as a fact repeatedly observed, that the splint, if properly applied, and aided by a tight bandage, will, as it were, mould the radius upon it, and restore its natural form.

A very important question arises at this stage of the inquiry. Can the methods of treatment recommended by Dupuytren, Nelaton, Dr R. W. Smith, and others, restore the natural form of the radius, or can they maintain it when it has been restored by manipulation, until firm osseous union has taken place? I believe they cannot, and for this simple reason, they do not afford a sufficiently solid mechanical support effectually to counteract the action of the supinator radii longus, the adductors of the thumb, and the other muscles, when there is a tendency to displacement; and if they do not, are those disastrous consequences which too frequently follow the accident to be referred to the injury inflicted at the time of its occurrence; or are they the result of inflammatory action subsequently set up in consequence of alterations in the natural relation of the parts?

When the radius is restored to its natural form, and thus maintained, the "stimulus of imperfection" ceases, and, as in other fractures, very little serious inflammatory action follows. I have so often witnessed relief of the pain, which was very severe before the application of the splint, that I regard pain as indicative of displacement rather than of fracture. In some persons, especially those in whom the general health is not good at the time of the accident, the subsequent inflammatory action may be great, and the result of the primary injury. When once it has commenced, it may continue until it ends by impairing the functions of the limb permanently. Still my firm conviction at present is, that in most cases the inflammation is not of primary, but of secondary occurrence, and that it is evidently due to the non-restoration of the natural form of the radius. If we examine a case carefully by dissection, in which there has been a slight inclination forwards of the concavity of the radius, we shall see changes sufficient to account for it. Do not the same train of symptoms arise in cases of fracture of the fibula, in which, after the consolidation of the fracture, the weight of the body is thrown more inwards upon the tarsus than it was before the patient met with the accident?

I have before me six specimens of the radial fracture, and in none of them has the natural concavity of the radius been restored. Dr R. W. Smith, in his admirable treatise on Dislocations and Fractures in the vicinity of Joints, says: "In not one of the twenty specimens which I have lately examined, has this object" (the restoration of the natural concavity of the radius) "been accomplished: in some it has been so far effected that the carpal surface looks directly downwards, but in none of them does the posterior surface exceed the anterior in length; in those which present the nearest approach to the natural form of the bone, these surfaces are of equal length."

Now, what are those alterations which result from the changed position which the carpal surface of the radius occupies?

The inclination forwards of the upper end of the carpal fragment causes its carpal surface to look downwards, and slightly backwards, which is also further increased by the greater absorption of its posterior half, evidently showing that the movements of the carpus upon the carpal surface of the radius are directed more towards its posterior border than natural; or, in other words, the centre of motion between the carpus and carpal surface of the radius is displaced backwards. Indeed, whilst the length of the palmar surface of the lower or carpal fragment seems to be little, if at all, altered, the posterior surface is shortened one or two lines by the progressive absorption of the posterior half of the carpal surface. One of the effects, then, of this accident is to wear away, if I may use the expression, the posterior half of the carpal surface, and cause shortening of the posterior surface, in some instances, by two lines at least; and leading to increased capability of extension, and diminished capability of flexion of the hand upon the forearm; also alteration in the line of action of the extensor muscles behind, of the flexors in front, and of all the other muscles which pass from the forearm to be inserted in the hand.

I have seen absorption of the vertical thickness of the scaphoid and semilunar bones. In one of the specimens of this accident which I have before me, the vertical thickness of the scaphoid and semilunar bones is unquestionably diminished; but as there is evidence of the presence of that morbid action to which the name of chronic rheumatic arthritis is given, the alteration may be as much the effect of this morbid process as of the accident. From the inclination inwards of the upper end of the lower fragment, the styloid process of the radius ascends, drawing with it the hand, and giving to the extremity the appearance as if the hand had suffered a slight partial dislocation outwards, causing projection of the lower end of the ulna, elongation of the internal lateral ligaments, and increased mobility of the carpal end of the ulna.

We may now perceive very plainly, from the changes in the natural relations of parts, and consequently in their actions, that the ligaments and sheaths of the tendons sustain a sort of chronic sprain, which, exciting inflammation, ultimately ends in greater or less impairment of the functions of the forearm and hand; that these occurrences are almost entirely referable to the displacement of the lower fragment of the radius; and that every mode of treatment which does not effectually restore the concavity of the radius must necessarily be followed by those distressing consequences which most surgeons have regarded as unavoidable and irremediable. That these distressing sequelæ may be almost entirely prevented I have not the slightest doubt; but, if so, this can only be accomplished by a splint accurately fitting the concavity of the radius, and effectually maintaining it. The treatment of fracture of the lower end of the radius will then be as easy as that of any other fracture, and unattended with any serious consequences as regards the future usefulness of the limb. I have often been told by practitioners that they have efficiently treated fractures of the lower end of the radius by compresses in front and behind, covered by straight or pistol-shaped splints. To this I reply: That your patient has had a fracture of the lower end of the radius, I admit; that you have set the fracture, restoring the natural form of the bone, I also acknowledge; that compresses and splints have been applied is another fact; and also that the patient has regained the perfect use of the limb. All these facts I admit. But I cannot admit, from what I have seen of this accident, that compresses, supported by straight or pistol-shaped splints, are adequate to restore the concavity of the radius and maintain its natural form, if there be a tendency to displacement, because they are not adequate to the correction of the displacements; and, being mechanically imperfect, deformity of the radius and its disastrous consequences must result.

Every practitioner who has carefully observed cases of this accident, and treated them according to the most approved methods hitherto adopted, must, if possessed of ordinary candour, admit the existence of the serious consequences which too frequently attend it, and which have been faithfully described by Dr R. W. Smith:—"The sequela of this injury is a source of great inconvenience to the patient, and of annoyance to the surgeon, who is often unjustly blamed for its occurrence; the practitioner will therefore act with prudence in warning his patient, at the commencement of the attendance, that stiffness of the wrist-joint, and an incapability of flexing the fingers, during a period of several months, are by no means unfrequent results of a fracture of the lower end of the radius" (p. 139). It would be presuming too much to affirm at present, that these untoward circumstances can be entirely prevented. Still, I am bound to state, from considerable experience, that, under proper treatment, they are very rare; so rare, indeed, that their occurrence neither need be anticipated nor dreaded.

In the formation of the splint, there are several points which should be carefully observed. The breadth of its lower or carpal end should not exceed that of the forearm at the wrist; it should not project so much internally as to be on a level with the inner border of the forearm. On the radial side, it should project beyond the radius; and the bevelled piece, for filling up the concavity of the radius, should be attached half an inch, at least, internal to that border. By this arrangement, the ulnar side of the forearm sustains the pressure of the bandage or straps. The reverse is the case on the radial side. The radial border of the splint alone is pressed upon; this pressure forces the bevelled portion inwards upon the concavity of the radius and pushes it backwards, whilst, at the same time, the outer border of the radius is protected from pressure. If the ulnar margin of the splint projected beyond the ulnar border of the forearm, it would be pushed outwards when we applied the bandage; and the bevelled portion would be removed from the concavity of the radius, and it would be left unsupported. The upper end of the splint should be well hollowed to adapt itself accurately to the convexity of the upper part of the palmar surface of the forearm.

In this, as in other fractures, I prefer broad straps, with buckles, to the ordinary calico or linen bandage, as they are more easily removed, and less liable to loosen. Indeed, for some time past, in the treatment of fractures generally, I have entirely discarded the ordinary circular bandages, using in their stead broad straps, with buckles attached; and whether we regard the comfort of the patient, or the satisfaction which the straps afford to the surgeon, the advantages are so obvious, that calico or linen bandages cannot bear comparison with them.

Another point, to which my attention has been particularly directed for some time, has especial reference to the diagnosis of injuries of the wrist and ankle joints, and may be of some importance to the junior practitioner. Fractures of the lower end of the radius are usually caused by falling upon the upper part of the palmar surface of the hand, when the patient instinctively extends his arms, whilst falling, to prevent his face coming in contact with the ground. If, after falling in this manner, a patient complains of having sprained his wrist severely, and is immediately afterwards unable to move it, unless with great pain, it is the radius and not the wrist-joint that has suffered. I cannot bring to my recollection a single instance of severe sprain caused in this manner. I do not mean to deny the possibility or probability of the wrist being sprained in this way; but I wish to impress upon the junior practitioner the importance of a maxim, which I have laid down for my own guidance, and it is this:—When a patient comes to me and says, "I have sprained my wrist, and am unable to use my hand," I assume the injury sustained to be a fracture of the radius and not a sprain, until I have satisfied myself to the contrary. When a patient requires my assistance for a severe sprain of the ankle-joint, caused by the foot being twisted either inwards or outwards, I assume that he has fractured the fibula, and that the whole injury is a fracture and not a sprain, until, by the most careful examination, I have satisfied myself to the contrary. Sprain of the wrist, from falls upon the palm of the hand, is a very rare accident. I do not remember having met with a single instance of it. Sprains of the ankle-joint, from twisting of the foot, I also regard as very rare accidents; whereas fractures of the radius and fibula are very common.

# Part Second.

## REVIEWS.

*A Practical Treatise on Mechanical Dentistry.* By JOSEPH RICHARDSON, D.D.S., M.D.; Professor of Mechanical Dentistry in the Ohio College of Dental Surgery. With 110 Illustrations. London: Trübner and Co. 8vo. 1860.

MECHANICAL Dentistry is perhaps a subject not presenting very many attractions to the purely medical reader. Nevertheless, dental surgery, as a whole, has of late become intimately associated with, and formally recognised in a separate and subordinate capacity by at least one of our greatest medical boards; consequently, it has recently engrossed a share of attention not hitherto awarded it by physicians and surgeons. The organs and diseases embodied in its surgical aspect are acknowledged as of no small importance. A certain amount of acquaintance with its mechanical applications is equally admitted as desirable in medical men. We need, therefore, make no apology for a notice, such as the present, appearing among our reviews.

A book of the kind under notice comes opportunely. It is among the first monographs of any consequence published on mechanical dentistry since the great simplification effected in this branch by the introduction of "vulcanite work." That description of work is here fully detailed; while every information capable of being given in such a manner, is abundantly afforded in this volume on all other points connected with the manufacture of artificial teeth. Very little mechanical or technical knowledge is requisite for the construction of dental substitutes with the material referred to. This to surgeons residing abroad, or in remote country districts, might and ought to be an inducement to acquire at least a general knowledge of its properties. Formerly the combination of not a few handicrafts was, to a certain extent, necessary in a dentist. Now, however, he need be little more handicraftsman than doctors or lawyers. Indeed, the apparatus for working vulcanite being possessed, little difficulty could be felt in acquiring any manipulative dexterity required.

It is the *mechanical* requirements of dentistry which have effected a separation between dentists and the medical profession. Oculists, aurists, obstetricians, and many other—in a certain sense—specialists, are still fully qualified members of that body; with dental surgery this is unhappily not the case, and the main cause seems to be that above specified. Mechanical dentistry has been considered the pith and marrow of the dentist's calling; dental surgery, properly so called, has been until lately deemed quite of secondary importance. The result is, that to hold a surgeon's diploma has been among dentists altogether the exception to the general rule; and, in order to conceal such an irregular state of affairs, too many dentists, unlike the other sectional branches above mentioned, have attempted to establish themselves as an exclusive, independent, and separate body of quasi-surgical practitioners.

Let us see what have been the consequences. The culmination of dental surgery, as a separate and isolated "Faculty," seems to have been matured in America; and, perhaps, there is no better method of illustrating the extreme and injurious distention to which this fractional part of surgery has there been submitted, than by looking over some of the advertisements of the different dental "colleges" established in that country. In the syllabus of such academic groves as the dental colleges of Pennsylvania, Baltimore, Ohio, etc., we find "the Session," the "Professors," and the "Course of Study" set forth and signed by a "Dean of the Faculty," with all the airs of a university announcement. The high feather in which "the Faculty" itself rejoices, seems equally well illustrated by quoting, from a recent number of one of its own special organs, the obituary notices of two of its members.

At page 274 of the *Dental Cosmos* for December 1860, we find the following gushing eloge:—

> "*Memoir of Professor Chapin A. Harris, late of the Baltimore College of Dental Surgery.*—On the 29th day of September 1860, in the city of Baltimore, a star of the first magnitude in dental science faded from its firmament. But it went not into oblivion. The glory of its former radiance remains behind, a patrimony to the family, a gratuity to the profession, and a bequest to the country of the late Professor Harris; which space can hardly circumscribe, nor time obliterate. As far as the literature of dental surgery finds its way among the nations and languages of the earth, the name of Chapin A. Harris is already known; and his published works, equally valuable and voluminous, will transmit that name to remote posterity."

And again, at page 279 of the same journal, the subjoined is found in memoriam:—

> "Died, in the month of August last, in Little Rock, Arkansas, of that fell destroyer, consumption, Dr Ezekiel L. Cloyd. The countenance pales and the heart sickens at the tidings of death, yet we refrain not from recalling a recollection of the departed, by placing on record our estimate of his worth. . . . Alas! how vain are the hopes of man! the most gorgeous conceptions of his fond imagination are in the twinkling of an eye cast down; and the embodiment of his ambitious spirit 'is resolved to earth again, to become a brother to the insensible rock, and to the sluggish clod, which the rude swain turns with his share and treads upon.'"

Here, by the way, we may express the opinion in reference to the degree of D.D.S., that such subdivisions are apt to be carried too far. Wherever an attempt is made to create so high an order of surgical beings as "Doctors" in some limited item in the province of medicine or surgery, as "in Dentistry," apart from attendance at medical schools in their usual and ordinary signification, the sublime bubble is apt to burst and shrink to the simply ridiculous. Let those who intend to devote themselves to dental surgery, or any other kind of surgery, first become surgeons. This seems reasonable, and is surely necessary. Let them obtain a real and recognised surgical diploma, or a medical degree, if such is desired. But let either qualification be obtained in a regular and complete manner, and at a regular medical school, and not consist in some title which appears positively to imply imperfection—literally signifying, learned only in a fragment of what learning ought to be possessed. The mere *title* of doctor leads to no good. Such irregular craft float round the vessel of legitimate medicine, and follow in its wake precariously subsisting on such garbage as falls overboard, instead of manfully, and far more wisely, becoming attached to the service. It is this self-abasement of dental surgery which disconnects it from the other sectional branches of medicine, and stamps it in every respect as of a lower status. A little learning is a dangerous thing; and of this proverb there is an illustration in the vapid and illiterate papers with which most periodicals of a purely dental nature abound. Semi-surgical practitioners cannot compete in writing on surgical topics with fully qualified surgeons. Hence, in its surgical, anatomical, and physiological departments, the special dental literature of all countries teems with much that is stale, unimportant, and incorrect. Indeed, most of its better medical contents are borrowed.

The case is very different, however, with mechanical dentistry. The papers contributed in this branch are of a far higher stamp, and in their originality are of much value and importance. Here the writers are fully educated, and the difference is at once apparent in the result produced.

Of this, the work before us bears abundant evidence, and does infinite credit to its author. Its comprehensive style has in no way interfered with most elaborate detail where this is necessary; and the numerous and beautifully executed woodcuts with which it is illustrated, render this volume as attractive as its instructions are easily understood. To enter on any particulars in reference to its varied and profuse stores of information on everything connected with dental mechanics, would here be out of place. But we must not conclude a notice of so useful a compendium without expressing the satisfaction with which we can reflect that such a book exists. As a work of reference, we can recommend it as one likely to become a standard authority on all the matters to which it is devoted. Finally, we trust that it will be found occupying a prominent place on the book-shelves, not only of dentists, but of medical men in general.

*On the Reparative Process in Human Tendons.* By WILLIAM ADAMS, F.R.C.S. London, 1860. Illustrated with Lithographs and Woodcuts.

IN this volume Mr Adams has, in a systematic manner, laid before the profession the result of the observations on the process of repair in human tendons, which he has been carrying on for a number of years. He has also included in it a series of experiments on rabbits, made for the purpose of still further elucidating the phenomena of repair. Many of these experiments and observations have been already published, in abstract, in the Transactions of the Medico-Chirurgical and Pathological Societies of London; but he has now "published them in full, in the hope that they may be found useful to those who may hereafter have the opportunity of investigating this subject."

Mr Adams has enjoyed the rare opportunity of dissecting, in the recent state, fifteen cases in which subcutaneous tenotomy had been performed; so that, from the ample field that he has had for pursuing his investigations, the conclusions to which he arrives are entitled to receive the attentive consideration of surgeons and pathologists. He describes the process of repair under four heads:—

1*st. Immediate results of the operation.*

The effects of subcutaneous division of the tendo Achillis in the human subject are described under this head; and it is pointed out that the amount of separation between the divided ends of the tendon depends upon the capability of the muscular fibres to contract and draw the upper portion upwards, and of the flexibility of the ankle-joint as the foot is restored to its natural position. Mr Adams is disposed to ascribe a considerable amount of influence to the cellular sheath of the tendon—by which he means the loose-textured areolar tissue which closely invests and surrounds it—in connecting indirectly the divided ends. In this respect he differs from Mr Paget, whose pathological views on this subject he, on the whole, however, adopts and confirms.

2*d. Commencement and nature of the reparative process.*

Increased vascularity of the structures at the seat of operation, especially of the cellular sheath of the tendon, commences the process, followed by a gradual infiltration of a blastematous material between the fibrous elements of this sheath. After a short time, numerous small oval nuclei appear in this blastema. Mr Adams, however, does not tell us from whence these nuclei proceed; whether they take their origin in the blastema itself by the aggregation of granules, or whether they arise by the division of nuclei pre-existing in the surrounding textures. This is a point that he does not appear to have attended to. We have long been of opinion that the material effused in the reparative process for the union of divided tendons, affords a favourable locality for the study of this subject; and that a set of experiments, carefully performed, might throw considerable light upon it. In the course of time the blastema assumes a distinctly fibrous appearance, so that it gradually assimilates in its structure to that of the old portions of the tendon, the divided ends of which it connects.

3*d*. *General appearance and structure of the newly-formed connective tissue, or new tendon; and its ultimate disposition.*

Mr Adams points out, that although the new tendon, under the microscope, presents a distinctly fibrous appearance, yet that, to the naked eye, it can be readily distinguished from the old tendon by its grayish, translucent appearance, and by the property which it possesses of spreading out like a bit of serous membrane, rather than splitting up into fibres, when teased out with needles. He has noticed this peculiarity in a human tendon three years after operation. He relies upon this appearance as a powerful argument against the "linear cicatrix theory," which has been advanced by Mr Tamplin, and supported by others of his colleagues at the Orthopædic Hospital. We are certainly at a loss to understand upon what sound physiological or pathological principles such a theory can be upheld, and we agree with Mr Adams in the remarks which he makes upon it.

4*th*. *Influence of the divided extremities of the old tendon; junction of the new with the old tendon; re-formation of a separable sheath on the surface of the new tendon.*

Under this head, the rounding off of the cut ends of the tendon, and the dovetailing of the new material with the split fibres of the old tendon, and, as a final step, the more or less perfect reproduction of a separable sheath on the surface of the tendon, are pointed out.

In the chapter on the reparative process in the tendons of rabbits, the author merely confirms the account which Mr Paget has given of the process of repair in the same animal.

We ought not to omit to state that the book is illustrated with a number of lithographs and woodcuts; and that, in an Appendix, a *résumé* is given of the writings of various authorities, both in this country and abroad, who have treated of the subject of the reparative process in tendons after division, either by subcutaneous or open wound.

## *Clinique Médicale sur les Maladies des Femmes.* Par M. GUSTAVE BERNUTZ et M. ERNEST GOUPIL. Paris, 1860.

THIS is the title of an elaborate work by two Parisian hospital physicians, of which only the first volume has appeared. Its name indicates that it is neither a systematic treatise nor a series of monographs; but it leaves us in some difficulty to say what it is. Our readers will form some notion of the structure of this "medical clinique," if they understand that all our knowledge of the diseases discussed is made to appear to be derived from the observation and study of cases which are given at length with full commentaries. This, if well and concisely done, forms a valuable and interesting kind of treatise, leading us back again to nature for the verification of every assertion, and checking the overgrowth or arrogance of hypothesis by the simplicity and sternness of naked truth as ascertained at the bedside and on the dissecting table.

We cannot believe that it is intended to complete the work as it has been begun, for, in that case, its proportions will be truly vast. Indeed, we hesitate not to say, that while it possesses, in the most essential respects, great and good qualities, it is deficient in concentration, and that the narratives of cases are loaded with particulars and details which might well have been omitted. A book of nearly six hundred octavo pages is occupied almost entirely by a small corner of the subject of hæmorrhages peculiar to women, namely, those in which blood enters the peritoneal pelvic cavity.

When it is remembered how very recent is the revival, or rather discovery, of the importance of these hæmatoceles, as they have been vaguely denominated by some, it will be evident, from the size of MM. Bernutz and Goupil's work, that the subject is one of great interest now, and that a deal of research has been spent upon it. But the exhaustiveness of German authors is not attained by the French; for we observe that, with the exception of Dr Tilt, recent British authors on the subject matter are not noticed in the volume before us. The observations of Dr West, and some cases published in this journal, besides others, were well worthy of the authors' attention, and would doubtless have received it if they had come under their notice.

One of the first hæmorrhages into Douglas' space which Dr Bernutz describes, although not a common, is a very interesting one. It had long been known that operations for complete retention of the menses were not unfrequently fatal, and the danger was supposed to be produced by toxæmia arising from absorption of the decomposing menstrual blood as it passed over the incisions which had been made to evacuate it. But Dr Bernutz shows that in many cases the danger is owing to the fact, that, after such operations, some of the retained blood may pass into Douglas' space, and gives rise to an inflammation of the peritoneum, which is more dangerous than that following other hæmatoceles in this place, because of the blood not being fresh and bland, but old and decomposing. As our author remarks, it is certainly a curious circumstance, that no escape of this fluid should take place into the abdominal cavity till free vent had been given to it in another direction; and perhaps the unlikeliness of the occurrence has led to its being too much neglected. The author explains the accident by supposing that contractions of the uterus and of the Fallopian tubes supervene upon the operation, being induced by the emptying of the organ, and the natural tendency of it to become contracted when its increased dimensions are not further required by physiological or pathological conditions. But we may suggest to the author, that at least a part of the explanation is to be found in the altered physical conditions of the abdomen. As this cavity is emptied of the retained menstrual blood, its tension is diminished, and the passage of foreign matter into it facilitated; indeed, if the walls of the cavity do not perfectly collapse as the morbid contents of the uterus are evacuated, the entrance of retained blood from the distended uterus and Fallopian tubes is positively invited.

Retentions from congenital closure of the vulvo-uterine canal are subdivided into various classes, each of which is illustrated by cases: absence of the external genital fissure, imperforate hymen, absence or obliteration of the vagina, imperforate vagina, imperforate cervix-uteri, imperforate Fallopian tube. To these succeed a series of interesting chapters on retention from accidental closure of the cervix-uteri or vagina; and a very valuable series on retentions when the closure of the canal is not complete. In cases of this last description, some light arises from this new point of view for what is usually called mechanical dysmenorrhœa. This class includes congenital or accidental contractions of the vagina or cervix-uteri, increase of volume of the cervix, obstruction of the canal of the cervix by growth, or by uterine displacements, or by spasm. Sometimes two causes are combined, as in cases of dysmenorrhœa membranosa, where our author believes that spasm of the cervix is a consequence of the inflamed condition of its lining membrane, and leads to retention of the menstrual fluid and of the exfoliated membrane. In discussing this disease, the author enters into long details to controvert the view of Oldham, who regards it as not inflammatory in its origin, and to support Dr Tilt in his demonstration of the opposite opinion, which has also received the support of a writer in the *British and Foreign Medico-Chirurgical Review* (Oct. 1853, p. 513), who describes the membrane discharged as inflamed menstrual decidua, and adduces its discharge in hard masses as evidence of its previously inflamed state.

The symptoms, diagnosis, and treatment of the various forms of retention are ably and lengthily discussed, especial attention being always given to the collection of blood in the utero-rectal space. Our author then advances to what he regards as hæmatoceles proper. From this category he very properly excludes all thrombi or effusions into the cellular tissue, a set of cases which some recent authors have confused with others under the new class of hæmatoceles in the female. His further restriction of the term to those cases where the effusions have analogies with those occurring in the male is artificial, and has value only as a piece of classification.

The hæmatoceles proper, then, include ruptures of varicose vessels of the uterus or of the tubes, hæmorrhagic inflammation of the pelvic peritoneum, rupture of varicocele of the ovary, or laceration of the ovary itself, or of a tube, also those connected with dysmenorrhœa, and with metrorrhagia or bloody flux from the tubes. Of this last class, there are cases recorded as occurring in chlorosis, anæmia, the puerperal state, abortion, measles, purpura, mental emotion. The treatment of these varieties is carefully given. We shall only note that, in opposition to M. Nelaton, our author discommends operative interference with the bloody collections, preferring the expectant method of treatment.

The volume is ended by M. Goupil's valuable essay on intrapelvic hæmorrhages, the result of extra-uterine pregnancy.

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*A Manual of Elementary Chemistry, Theoretical and Practical.* By the late GEORGE FOWNES, F.R.S. Eighth Edition, revised and corrected. London: John Churchill. 1861.

WE have already repeatedly, on the occasion of successive new editions, expressed our approval of this manual as an elementary text-book of chemistry at once clear, comprehensive, and condensed. So short a time has elapsed since the last edition, that few alterations have been required in the present one. We are glad to observe, however, that, in order to keep the work on a level with the advances of modern scientific chemistry, the editors—Drs Bence Jones and Hofmann—"have considered it advisable to give, in the form of an Appendix, the substance of the late Professor GERHARDT'S views on Chemical Notation, which are daily gaining ground, accompanied by a synoptical classification of the more important groups of chemical substances, founded on the new system." This arrangement is made for the sake of greater convenience, the editors being of opinion that the time "has not yet arrived for adopting Gerhardt's system in the text of the work; for, although this would cause a gain in scientific arrangement, yet this classification, in its present form, might interfere with that simplicity and clearness" which are so desirable in an elementary text-book. We trust, therefore, to find in future editions a fuller and more detailed exposition of these philosophical views, the importance of which has been more speedily and fully recognised in Britain and in Germany than in France, the native country of their distinguished author.

In a note at the end of the volume, a short account is introduced of the new method of analysis by examination of luminous prismatic spectra, which has been recently discovered by Professors Kirchhoff and Bunsen, and which seems to possess a delicacy truly marvellous, and promises to yield the most extraordinary and interesting results:—

> "By examining the spectra of non-luminous flames into which certain compounds were introduced, Kirchhoff and Bunsen have observed that each *volatilizable* metal has a spectrum of its own. Thus sodium produces a sharply-defined bright yellow line; lithium two lines, one crimson and the other faint yellow; calcium gives one green, one orange, and five other rather indistinct

lines, varying in colour between red and green; strontium produces seven red and orange-yellow bands, one of which is very strongly marked, besides a deep violet line at the other end of the spectrum. It has been found that the minutest traces of these various metals can be detected with perfect certainty, as small a quantity as $\frac{1}{3000000}$ of a milligramme of sodium being recognisable with facility."

By means of this spectrum analysis, Messrs Kirchhoff and Bunsen profess to have discovered in the mineral waters of Kreutznach a new metal, to which they have given the name of *Cæsium*, from the greyish-blue lines which it produces in the spectrum. The most remarkable result, however, of this new method of analysis is the possibility it seems to afford of ascertaining the composition of the sun by means of its own light! If Kirchhoff's experiments and conclusions are correct, Fraunhofer's lines, which have been so long known to exist in the solar spectrum, would prove to demonstration the presence of the volatilizable terrestrial metals in the atmosphere of the sun.[1] It will be curious to watch how far these wonderful discoveries are confirmed or extended on further investigation; in the meanwhile, they are likely to excite scientific curiosity in the highest degree.

## *Stammering and Stuttering; their Nature and Treatment.* By JAMES HUNT, Ph.D., etc. London: Longman, Green, Longman, and Roberts. 8vo. 1861.

IN a cemetery somewhere on the Continent, is a monumental inscription testifying to the rare qualities of a deceased *epicier*. The effect, however, is somewhat marred by the epitaph announcing, at its conclusion, that the worthy grocer's widow still carries on the business at the same shop. There is nothing objectionable in this latter announcement taken by itself; but when we find it appended to a theme of a solemn and serious character, it becomes not only incongruous, but repulsive. In a somewhat similar manner Dr Hunt's book impresses us by its concluding pages; and we are sorry and disappointed that it should do so—its first part being unexceptionable. The last part is a mere advertisement.

Dr Hunt treats his subject in a masterly and compendious manner. His remarks on the history, nature, and cure of stammering and stuttering, are sound, comprehensive, interesting, and of important practical value.

In the author's own words, "The reader may now search without disappointment for every phase of defective utterance, as the present volume contains, in a condensed form, a comprehensive survey of nearly all theories and remedies proposed in relation to impediments of speech, from the earliest period to the present time."

It is a book, in short, the contents of which are abundant evidence of its having emanated from one thoroughly conversant with its subject; evidence requiring no such aid as can be afforded in the mere testimonials adduced by Dr Hunt in support of his qualifications and success.

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[1] See the *Saturday Review*, March 16th, p. 271.

To all interested in the matters of which it treats, we can most unhesitatingly recommend this volume.

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*Analytical Tables for the Use of Students of Practical Chemistry.* By MURRAY THOMSON, M.D., F.C.S., Lecturer on Chemistry Edinburgh Chemical School. Pp. 20. Sutherland and Knox. 1861.

THESE Tables, to quote the author's words, "are meant to exhibit, in as short a compass as possible, the most reliable reactions for the more commonly occurring bases and acids, as well as plans for the thorough testing of unknown substances." We have examined them with some attention. They are concise, accurate, and evidently arranged with great care. The information they contain is presented in a striking manner to the eye; and where time is of consequence,—as in the laboratory of the chemist,—the value of such Tables for the purpose of ready reference must be evident. They are also adapted for the student and practitioner of medicine; for whose use various tables for the analysis of urine, urinary calculi, etc., are added.

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*Diagrams of the Nerves of the Human Body.* By WILLIAM HENRY FLOWER, F.R.C.S., Assistant-Surgeon to, and Demonstrator of Anatomy at, the Middlesex Hospital. London: Churchill. 1861.

THIS volume consists of six large plates, in which the arrangement of the nerves of the human body is represented in the form of diagrams or plans, exhibiting the course, divisions, and connections of the main trunks, and their distribution into branches. Plates I. and II. are devoted to the cranial nerves; Plates III. and IV. to the spinal nerves; Plate V. to the sympathetic; while Plate VI. shows marked off, in an outline sketch of the cutaneous surface of the body, the different regions or territories supplied by the various sensory nerves. These diagrams will be very useful aids to the student or practitioner in understanding or remembering the complex details of nervous distribution; and we can strongly recommend them, as affording clear and accurate information in a very accessible form. Students must remember, however, that such diagrams should serve as accessory means of study only, and are not intended to be substituted for the examination of the nerves in their relation to surrounding parts, as ascertained by anatomical dissection and demonstration. Their true purpose is to give a connected view of the results of previous anatomical inquiry; and for this end they are exceedingly well adapted.

# HARVEIAN ORATION,

DELIVERED BY DR CHARLES BELL, ANNUAL PRESIDENT OF THE HARVEIAN SOCIETY, ON THE 12TH OF APRIL 1861.

Gentlemen,—In endeavouring to comply with your regulations, I have had much difficulty in finding a subject on which to address you; and I think you will sympathise with me, when you consider how many men of eminence have addressed this Society on similar occasions during the last seventy-nine years, illustrating almost every subject of interest in medical science and biography with far more eloquence than I can pretend to. I trust, however, that the subject I have chosen will not appear unworthy your attention, and that you will make some allowance for my deficiencies.

The science of midwifery, which I wish to bring under your notice, is one of great interest, and is so ancient, that it seems to have commenced with the first race of mankind. And were we to estimate it according to its usefulness, we should consider it the most important branch of medicine; because, while the others are subservient to the comforts and conveniences, or even the preservation of individual life, midwifery comprehends the care and management of the most helpless and amiable members of the community in circumstances of great trial, in which the life and wellbeing of at least two persons may be implicated. In short, on the due performance of the art of midwifery depends in a great measure the very existence of the human race in a civilised state. This circumstance was well understood by Pharaoh, King of Egypt, who consulted the midwives when he wished to diminish the power of the Israelites, and retain them under his subjection; and the reply of those excellent women is remarkable, as showing that the chosen people of God had the blessing of having easy and rapid labours, thus forming a striking distinction between them and the luxurious Egyptians. But midwifery is recommended to the Society on other grounds, having been the favourite subject of study, and having occupied much time and attention, of the celebrated Harvey, in honour of whose memory we are this day assembled. It therefore occurred to me that it would be a suitable and acceptable subject for consideration on this occasion; and I only regret that it has not fallen into the hands of some one better able than I am to do it justice.

It would occupy more time than is allowed me, were I to give a full or satisfactory history of midwifery. I shall, therefore, confine my remarks to a brief account of it as it existed at the time of Harvey, and hurriedly trace its progress to its present high state of perfection; in the course of which I shall refer to some of those authors who became eminent in its practice, and to whom it is more particularly indebted for its great improvement.

Previous to the time of Harvey, midwifery made no progress as an art, and attracted little of the attention of physicians in this country, as then, and for many years after, it was exclusively in the hands of midwives, who are represented to have been an ignorant, selfish, and presumptuous class, who would rather sacrifice the life of their patient than admit their inability to deliver her; and they never sent for assistance when they could avoid it. The physician had, therefore, little opportunity or encouragement to acquire a knowledge of natural parturition, as the only cases he was called in to were those of preternatural labour, in which, being anxious to show his superiority over the midwife, and to deliver the woman, he too often destroyed both the mother and the child. This unfortunate circumstance led to the conviction in the lying-in chamber, to use the words of Dr Chamberlain, "that whenever a man comes, one or both must necessarily die;" and many women, therefore, rather died than send for a doctor. This unfavourable impression had a serious effect in retarding the advance of midwifery, and in prolonging the influence of the midwives.

The most important work that appeared previous to the time of Harvey, was Dr Raynald's edition of "The Byrth of Mankynd, or the Woman's Boke," which was published in 1540, and went through many editions, and was the most popular work on midwifery for upwards of a hundred years. It is supposed to have been originally written by Eucharius Rhodion, a German, in Latin; but the subsequent editions were in English, and printed in black letter. It gives a very fanciful idea of the anatomy of the uterus, and the mechanism of labour. Like the more ancient authors, from the time of Hippocrates, the writer of this book divides labour into two classes only, viz., the natural, and the not-natural. By the natural labour, he implied that in which the child should be born both in due season and in due fashion. The due season is most commonly after the nine months, or about forty weeks after conception.

The due fashion is this: "The head cometh forward, then followeth the neck and shoulders, the arms with the hands lying close to the body toward the feet, the face and forepart of the child being toward the face and forepart of the mother." He adds, "If the labour is natural, the deliverance is easy, without long tarrying or looking for it."

The not-natural labour he considered to be that "when the mother is delivered before her time, or out of due season, or after any other fashion than is here specified; as when both legs proceed first, or one alone, with the hands up, or both down, or else one up and the other down." He further divided not-natural labour into "easy, uneasy, difficult, or dolorous." He considered that painful labour might be the consequence of too early pregnancy, as when it occurs before the twelfth or fifteenth year; or it might arise from piles, apostems, pustules, or blisters in the neighbourhood of the pelvis; or from the child being dead, and unable to assist in its own delivery. His rules of practice are on a par in simplicity with his classification of labour. When only one leg presented, he advised that the woman should lie on her back, and raise her thighs and the lower part of her body, so that the head should be the most dependent part. The midwife shall then endeavour to push back the foot again, and then desire the patient to move herself so as to bring down the head of the child, and thus change her labour into a natural one, when she was to be replaced on the labour stool.

It will not be uninteresting to refer to his views in regard to sterility, as showing the state of physiological knowledge at that period. He considered woman in the same light as if she were ground receiving seed, and that her fruitfulness depended on her womb being neither too moist nor too dry, too hot nor too frigid; otherwise she became barren. This circumstance might also depend on the seed itself; and when it was desirable to ascertain whether it was the man or the woman that was at fault in this respect, he recommended that some barley should be steeped for twenty-four hours in their urine, and then planted in a flower-pot, and watered every morning with their urine, and the seed that did not grow indicated the sterile person.

Rather more than a century after the publication of Dr Raynald's work, the celebrated Harvey, having rendered his name immortal by the discovery of the circulation of the blood, turned his attention to the study of gestation, and pursued his investigations with his usual energy and talent. He has given much interesting information on this subject, as it occurs in the lower animals, more especially in the oviparous classes, and in the deer; in his researches in regard to which he had remarkable facilities afforded him by the kindness of King Charles the First, who took a deep interest in his scientific pursuits, and allowed him to obtain from the royal park roes at all periods; and even condescended to examine some of his specimens of the punctum saliens in the chick, and in the roe, some of which he had dissected in his presence. It is very remarkable, that although Harvey seems to have practised midwifery to a considerable extent, he left it very much as he found it, having been satisfied apparently with carrying out the practice of his time without improving it by his experience and observation.

He had in consequence very erroneous opinions in regard to the physiology of the gravid uterus, and the mechanism of labour. He supposed that, as all animals, when asleep or in a state of rest, fold their limbs so as to enable them to assume a globular or oval form; so, in like manner, the fœtus, which he imagined passed the greater part of its time in a dormant state, adopted a similar posture, as being the best suited for repose. Therefore, in the early part of pregnancy, it is found with the knees drawn up towards the abdomen; its feet crossed; one hand resting on the temple or ear, the other on the chin, on which places there is found after birth white marks, the result of pressure or friction of the fingers; the spine is bent forward, forming a semicircle with the neck; the head falls or rests on the knees, with the face looking to the spine of the mother. But, a short time before birth, it performs a sort of summerset, when the head dives to the lower part of the uterus, as if in search of the outlet. This change of posture is followed by the uterus falling lower in the pelvis, and becoming softer in its texture, and the orifice gradually dilates, so that the bag of waters is advanced before the head, and forms an elastic cushion in the vagina. The external parts relax, the cartilages lose their rigidity, and the bones of the pelvis readily yield to the pressure of the child. All these processes, he believed, were much facilitated and shortened by the influence of the moon, when half-full, which moistens and relaxes the parts. The immediate cause of labour, he asserted, was the amnion becoming so contaminated by excrementitious matter, that it was no longer fit for the nourishment of the fœtus, which was, therefore, induced to struggle for its expulsion; and when the labour was natural, it was delivered enveloped in its membranes, like the ripe fruit, which drops from the tree without scattering its seed. In this state it might remain for several hours without any risk of suffocation, which induced him to believe that the child might be taken from the womb by means of the Cæsarian section several hours after the mother's death ; as, while it is buried in the membranes, it has no need of air.

He also believed that parturition was a conjoint act, in which both the mother and the child performed a part; and if either were deficient in their duty, the labour was rendered tedious and painful: but that labour might be effected by either independently of the other, as was exemplified by the circumstance of the child being born spontaneously some time after the mother's death, of which he relates an instance; and by its being expelled still-born, as occurred in another patient of his, who had suffered from procidentia uteri. He considered that parturition might occur at any period between the 7th and 14th, or even the 16th month, of which he gravely mentions an instance ; but that the ordinary duration of pregnancy was clearly indicated by our blessed Saviour, who remained in His mother's womb from the annunciation until His nativity, being a period of 275 days. This is the most valuable suggestion which Harvey has made in regard to human gestation ; as more recent observation has proved that it is so frequently correct, that it is questionable if it should not be held as establishing the natural period of gestation, instead of the 280 days which is now generally laid down as the duration of pregnancy.

When we consider Harvey's remarkable talent for investigation, and the clearness of his judgment, we cannot but regret that he did not devote more time to the study of gestation and the mechanism of labour ; for, had he done so, he would not have committed the errors which I have just referred to, and consequently they would not in all probability have been repeated by succeeding authors, and been the means of encouraging others to inculcate still more untenable theories and superstitions on the subject. When referring to the various absurd theories and errors which were entertained in regard to midwifery, we cannot overlook the work of Nicholas Culpeper, who styles himself "Gentleman Student of Physic and Astrology," and was cotemporary of Harvey's. He writes with much pretence, inducing the reader to suppose that he was a person of great experience, and that his opinions were founded on his own observation. He held midwives in great estimation, and had an exalted opinion of the duties they had to perform. He therefore addresses them in the commencement of his book in a solemn and impressive manner ; and it would have been well for humanity had they and others who have practised midwifery always been actuated by his remarks. He tells them that "they are of the number of those whom his soul loveth, and that he makes daily mention of them in his prayers ; that he wishes them success in their office in this world, and a crown of glory in that to come." "If they would only make experience of his rules, which are plain and easy enough ; neither are they so many that they will burden their brain, nor so few that they will be insufficient for their necessity ;" and by following them, they will not require to call for the help of doctors, of whom he had a very unfavourable opinion ; and says, "Their covetousness outweighs their wits as much as a millstone outweighs a feather. How they will answer for it another day, God knows.—I pity their condition." But on again turning to the subject of the midwives, he exclaims, as if to show the difference between them and the doctors, "Oh what manner of woman ought a midwife to be! With what knowledge, skill, industry, and sincerity ought she to perform her office!" "She ought to be quick-sighted as Argus—her wits in her head; for books are at home. Hippocrates was never better skilled in physics than she ought to be." Let every honest woman, when she goes to deliver a child, remember that for that day's and night's work she must another day give account before a high tribunal. We would almost be led to suppose this learned student had been reading Shakespeare before he wrote this address, and that he had been induced to parody Hamlet's beautiful description of man:—

"What a piece of work is man! how noble in reason! how infinite in faculties! in form and moving, how express and admirable! in action, how like an angel! in apprehension, how like a god! the beauty of the world! the paragon of animals!"

After such an introduction, we are naturally led to expect much physiological and practical instruction; but, on the contrary, we find that his book, although well written, is merely a compilation of the prejudices and the superstitions which prevailed in regard to midwifery previous to his time; and it is very doubtful if he ever were present at the birth of a child,—at all events, he admits his ignorance of the mechanical part of midwifery. He believed that conception was the result of the influence of the planets; and he goes so far as to assign to each its peculiar duty in this process, and the period it was performed. It may be marred by various circumstances, however; and in order to avoid such a casualty, he advised the woman to carry a loadstone, which not only prevented barrenness, but it produced concord between husband and wife. She must, at the same time, take nourishing and wholesome diet, such as the eggs of the sparrow, partridge, quail, or the pheasant, as the passions of these birds are strong. But should these means be unsuccessful, she must take the uterus of a hare, beat into powder, in Malmsey; or, if she is abstemiously inclined, she may take the testicles of a fox, prepared in the same way, in sheep's milk. When labour was tedious, he recommended that the stone ætites should be applied to the vulva, which was capable of drawing away the child as readily as the loadstone does iron; or the parts might be rubbed with the juice of the garden tansey. In the event of all these means failing, the hoof of a horse or an ass, or a piece of coral, might be used as an application. But enough of such specifics. I shall now proceed to show that the high opinion entertained by Culpeper for the midwives, and the influence they possessed, were not confined to the period at which he wrote; for we find in some parts of Ireland, even at a very recent period, if not in the present day, they were held in equal estimation, and had even greater influence over the people than they had in England in olden times. The Irish midwife has unlimited sway in the house of her patient, and is strictly obeyed in everything during the continuance of the confinement, and she makes all the arrangements for the child's christening. She is supposed to have most important charms and privileges, and is consulted in all cases of love and marriage. Among other secrets, she possesses that which enables her, when the husband is cruel to his wife, or suspects her unjustly, to transfer from the wife to him—all the pains of labour. This peculiar charm was obtained in the following manner: It happened at one time that the "good people," or Dhoine Shee, or fairies, were under the necessity of having recourse to the aid of a midwife, who discharged her duty so skilfully, that the fairy matron, in requital (for it was not lucky to receive anything in the shape of tangible reward) of her services and promptitude of attendance, communicated to her the secret, which was never to be divulged except to a woman, of punishing all bad husbands; and it has been handed down for many generations, and been put into practice on many occasions with great advantage. It is the custom for the midwife, on arriving at the patient's house, to go round it from east to west, stopping a short time at the window, which she marks five times with the sign of the cross, and also each corner of the house, and repeats a charm to the following effect:—

The four Evangels an' the four Divines,
God bless the moon, an' us when it shines.
New moon,[1] true moon, God bless me;
God bless this house an' this family.
Matthew, Mark, Luke, an' John,
God bless the manger where Christ was born,
An' love, joy, an' comfort here in the morn.
St Bridget, an' St Patrick, an' the Holy Spouse,
Keep the fairies for ever from this house.
Amen.

Having uttered this charm, she entered the house; and if the labour threatened to be tedious or severe, she sent in search of a seventh son who was not left-handed, in order that he might give the patient three shakes in his arms, which was considered an infallible remedy in such cases. But should no such person be found, then she took half a dozen heads of blasted barley, and having stripped the fine black powder from them, she steeped it in milk, and gave it to the patient, as it was considered to have a beneficial effect in tedious labours. In this remedy, we have a singular substitute for the ergot of rye.

But to return to our narrative. Although, induced by the example of Harvey, many men of talent devoted their attention to the practice of midwifery, and many works were published on the subject, its progress as an art was very slow; as it was the custom for accoucheurs to conceal their mode of practice, and the authors copied from their predecessors, without adding anything new or important. A very striking example of the low state of the art is given by Cook in his *Marrow of Chirurgery*. He states that he was called to see a woman in labour, and he was told by two midwives who were in attendance, that the woman's condition was desperate, and that the child was dead; but on examination he found the woman's pulse good, and the child apparently alive, and in the right position. He therefore proposed to go for some medicine, which would have the effect of promoting the pains; but the women laid hold of him, and took him by violence to the bedside, and would not let him stir until he delivered the woman. He had no other resource than to apply an instrument—but of what kind, he does not say,—and having pierced the head, delivered the child alive. He afterwards dressed the head with parsley and butter, and in course of time it got well; but a careless servant let it fall in the fire, when it was burned to death. In another case, he delivered a child alive by fixing his instrument in its eye, which, however, was little injured; and the child lived until it was upwards of fourteen years of age.

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[1] If it was not new moon, then she adopted the words, "Good moon."

The most eminent of the practitioners who turned their attention to midwifery at this period was Dr Chamberlain, who attained great celebrity as an accoucheur in London in consequence of his having invented the forceps. But this invention was of little service to his cotemporaries, as he had the degrading selfishness and heartlessness to conceal it; although he was aware that it was the custom in all cases of difficult or tedious labour to use the crotchet, whether the presentation were natural or not. He attempted to sell his discovery, however; and for that purpose, his son Hugh went to France. But that vain and injudicious young man having confidently attempted to deliver a woman in whom Mauriceau said the Cæsarian section was necessary, he was unsuccessful, and he returned home crestfallen and disappointed. He soon after published a translation of Mauriceau's *Midwifery*, which was held in high estimation in this country for many years. In his introduction to this work, he endeavours to apologize for the concealment of the forceps, but his reasons are very meagre and unsatisfactory.

The next author of eminence was Dr Moubray, who published a work, called the *Female Physician, or The whole Art of Improved Midwifery*, in 1719, in which he condemns the use of instruments; but it is quite clear that he was ignorant of the nature of the forceps. He had the merit of being the first public teacher of midwifery in this country, and delivered his lectures in his own house. These lectures amounted to twenty in number. Twelve were devoted to the anatomy and physiology of the parts concerned in parturition, and eight to the practice of midwifery; but he added little information on the subject that was interesting or important.

We now come to the period of Chapman, who was the second public lecturer on midwifery in London. He published his excellent treatise in 1733, giving some valuable practical suggestions, among which he claimed the use of the fillet when the child's head was low in the pelvis; he also recommended the dilatation of the os uteri with the finger when it formed a rigid band round the fœtal head. But his principal merit was giving the first clear description of the forceps, which had lain neglected and unknown from the time of Chamberlain. His mode of applying them, however, was very different from that now adopted, and consequently far less safe and easy; as he introduced them in the anterior and posterior diameter in place of the transverse. He did not use them in all the cases in which, had interference been justifiable at all, they might have been employed with safety and advantage; as, when tedious labour was apprehended from the head being high in the pelvis, with the face towards the pubis, he recommended turning, in order that the size of the head might be diminished by the overlapping of the bones at the sutures. He must have been a rash and meddlesome midwife, as he states that he performed the operation several hundred times. When the cord was round the neck, he was in the habit of cutting it when the child was born as far as the shoulders, in order to prevent the inversion of the uterus or the separation of the placenta, of which he had seen several instances. I refer to these operations more particularly, because the first has been recently performed with great advantage as a substitute for the perforator; and the second, I am surprised to find, is practised by some modern accoucheurs. I cannot say judiciously or safely, as I have seen the shoulders remain twenty minutes in the passage after the head was born. This author had other strange practices, as he was in the habit, after tedious labour or operations, of wrapping the patient in the skin of a sheep which he had killed for the purpose. He borrowed this barbarous and disgusting practice from Father Clement, who attended the Dauphiness of France; and he was so anxious that the skin should be applied warm, that he had the sheep brought into the princess' room, where it was killed by the butcher, which alarmed her exceedingly.

Sir Richard Manningham commenced as an apothecary, and afterwards became an eminent accoucheur in London. He was a learned and highly accomplished man, and had the credit of establishing, for parturient women, a ward in the Parochial Infirmary, St James, Westminster, where he also gave lectures and clinical instructions in midwifery. This was the first attempt at a lying-in hospital in this country. He published in 1739 his *Compendium Artis Obstetricandi*, which was characterized by Haller as a clear and concise work, giving in a few words a description of natural and preternatural labour, and the various positions of the fœtus, and how to correct its malposition.

Dr Fielding Oulde was a celebrated practitioner in Dublin, where he published his work in 1740, containing many interesting and important observations both in regard to the physiology and practice of midwifery. He was the first who clearly pointed out that while the uterus becomes developed in pregnancy, its walls do not become thinner, as we should be led to expect, judging from what takes place in other hollow viscera when distended. He strongly opposed many of the opinions which were entertained at the time, more particularly in regard to the position of the fœtus, which, he asserted, should be with the chin resting on the shoulder, while the breast was towards the sacrum of the mother; by which arrangement he supposed it was enabled to accommodate itself to the elliptic form of the pelvis. He had a sort of craze in favour of an instrument which he called his "Terebra Occulta," which, notwithstanding his high estimation of it, was a horrid and useless instrument, resembling a trocar and canula, with a special spring connected with the part corresponding to the trocar, to draw it back when pushed beyond canula. The object of this instrument was to open the fœtal head.

Dr Burton, a practitioner at York, published an elaborate treatise in 1751, called an *Essay toward a Complete New System of Midwifery;* in which he objects strongly to Oulde's opinion in regard to the position of the fœtus in natural labour; and he asserts that the proper position is with the chin resting on the breast, so that the summit of the head always presents, and acts like a wedge in dilating the passages. His book is illustrated with many plates, which give a very fanciful representation of the gravid uterus and the position of the fœtus. He gives a melancholy picture of the ignorance and harshness of the midwives; but, while he condemns them, and assumes a superiority over them, he seems unaware that his own knowledge was most defective, although he admits that he was not aware that there was a distinction between the male and female skeleton until he read Dr Monro's celebrated work on the bones. His representation of the pelvis is exceedingly good, however; and his measurement of its diameters, and those of the fœtal head, are wonderfully correct.

At the time that Burton wrote, the subject of the nourishment of the fœtus was much discussed; and we find that Dr Monro, although not an accoucheur, wrote an excellent paper in the *Edinburgh Essays* (vol. ii. p. 7) on the subject, in reply to one by Mr Gibson, who still supported the erroneous notion that the fœtus was nourished partly by the mouth, and partly by the umbilicus. Dr Monro performed many experiments on the lower animals to support his opinion that there is no direct communication between the vessels of the mother and those of the fœtus; and he endeavoured to prove that the mother supplied certain fluids for the nourishment of the fœtus, which were taken up by absorption by the umbilical vessels, and conveyed to the fœtus, much in the same manner as the lacteals do in the intestines.

We now come to the period when a great change was effected in the knowledge and practice of midwifery, through the talents, industry, and mechanical genius of Dr Smellie. This eminent accoucheur was born at Lanark; and having studied under the famous Gregoire of France, he returned to practise in his native town. But he was soon induced to go to London, where he became a popular teacher of midwifery; and, according to his own statement, he taught nearly a thousand pupils, who, while attending his lectures, delivered eleven hundred and fifty women, who were supported during their confinement by the voluntary contributions of the pupils. While he was an excellent teacher, he never got into the high class practice as an accoucheur, in consequence of his vulgar appearance and coarse manners. He spent seven years in preparing his lectures for publication, and they were brought out in a series of three volumes: the first was published in 1752, the second in 1754, and the third was posthumous. These volumes contain the principles and practice resulting from forty years' experience, and they form by far the most valuable and complete work that had been published on midwifery. It would be an arduous undertaking to enumerate all the improvements and important suggestions which were made by this celebrated accoucheur in regard to the practice of midwifery, as it would amount to a statement of nearly all that is excellent in modern practice. We cannot avoid referring to some of his improvements, however; and the one which comes most prominently under our notice is the change he effected in regard to the forceps, which, previous to his time, was comparatively a rude and imperfect instrument, very difficult and uncertain in its application, which was so frequently attended by fatal results, that Dr Hunter was induced to say, "I wish to God they had never been contrived. I am convinced the forceps have killed three, I may say ten women, for one that they have saved." This remark could scarcely apply to the forceps as improved by Smellie, who may be said to have entirely remodelled them, and supplied them with the beautiful and simple joint which is now universally used. But his improvement in the forceps would have been of little value comparatively, had he not also established the principle of their application, which, before his time, was a random operation,—the blades being introduced wherever there was room, with a total disregard to the position of the fœtal head; and the traction was made in a direct line, by which the soft parts of the mother were fearfully torn, and the fœtal head injured.

Besides the improvement in the forceps, Smellie also invented a new crotchet and scissors for the performance of embryotomy; and he published a series of thirty-nine plates illustrating the anatomy of the pelvis, the position of the fœtus in utero, the mechanism of labour, and the application of the forceps. He also invented machines or phantoms in imitation of the female figure, for the purpose of showing the position of the fœtus, and the different operations and kinds of labour. Having rendered the forceps so complete, it is not a little remarkable that he should have suggested the formation of wooden forceps as a substitute for the steel, and actually made several successful experiments with them.

Smellie did not escape the professional jealousies and bad feeling of some of his brethren, and particularly of Dr Burton, and Dr Douglas, who has "denominated himself Physician Extraordinary to the Prince of Wales, and Man Midwife." He addressed two letters to him, accusing him of degrading the profession by teaching midwifery at too low a rate, and giving certificates to pupils who had attended only for a few weeks. These pupils were generally apothecaries from the country, and, after two or three weeks, returned to their shops armed with diplomas signed by the professor, and attesting their proficiency in midwifery. These diplomas were framed and hung up in some conspicuous place in their shops. Smellie used to charge a guinea for four tickets, or ten and sixpence for one, which he called an "universal lecture," in which he unfolded the whole art of midwifery. He was also charged with having "a paper lantern with the words, 'Midwifery taught for five shillings'"—a lecture, it is supposed.

He died at an advanced age, at his native town of Lanark, in 1763; and is said to have been unassuming and disinterested in all his proceedings, and was never heard to depreciate a professional brother.

Dr William Hunter was a cotemporary of Smellie's, and was a fellow-labourer in the improvement of midwifery, on which he bestowed much time and attention, and became so expert an accoucheur, that, according to his own words, he "could turn the child with one hand, and eat bread and cheese with the other." This was an unseemly boast, and naturally leads one to ask if he was so engaged when he ruptured the uterus in attempting to turn the child. Nevertheless he was a judicious and cautious accoucheur, and made many excellent suggestions in regard to practice; and, perhaps, the most important advice to the accoucheur was impressing on him the propriety of patience, and allowing nature an opportunity to carry out her own work without interference, by which many lives were saved by avoiding the use of instruments or turning, in cases in which they would previously have been had recourse to. He carried this principle a little too far, however, in regard to the management of the placenta, which he was in the habit of allowing to remain, in some cases, in the uterus for two days after the birth of the child. But his great merit was not so much in his practical observations, as in his admirable descriptions and illustrations of the gravid uterus, and the anatomy of the placenta, which laid the foundation of all our sound knowledge in regard to these important subjects.

I should have wished to have pursued this narrative more fully, by referring at greater length to many illustrious individuals who have carried out successfully the principles and suggestions of the two eminent men I have just mentioned; but I have already occupied too much of your time, and must now hasten to a conclusion by alluding in a very cursory manner to a few only of those who have rendered themselves remarkable for what they have done for midwifery, both as to its practice and physiology. By far the most eminent of these was Denman, whose valuable *System of Midwifery* has long been held in high estimation, both in this country and on the Continent. He not only commemorated all that was good in previous authors, but he added many valuable suggestions of his own, among which stands prominently forward his recommendation of premature and artificial labour in cases of malformation of the pelvis, which has been the means of saving many lives, and giving joy to many a household. The only other observation of this author which I shall refer to, is his interesting account of spontaneous evolution, which he was the first to notice. It would have been interesting to have traced the personal history of this excellent man, but this I must forego at present.

Dr Osburne, who was the colleague of Denman in his lectures, and afterwards succeeded him, published in 1792 his *Essays on the Practice of Midwifery*, in which he endeavours to prove that the tediousness, difficulty, and danger of human parturition are inevitable, as they are dependent on the peculiarity of form and the erect posture of the body. He makes many useful suggestions in regard to practice; but the chief object of his book seems to have been to establish the superiority of the forceps over the vectis, which had been recommended very unexpectedly by his late colleague. This gave rise to a dissension between those eminent individuals, which was never overcome. The next author I shall refer to as publishing in the last century, is the celebrated Dr Burns of Glasgow, whose first work, the *Anatomy of the Gravid Uterus*, was published in 1799; and in 1824 appeared his *Principles of Midwifery*, which has always been considered a standard work, and has gone through many editions. It contains all the important opinions and suggestions of previous authors, improved and verified by Burns' personal experience and observation; and its merits are too well known to the profession to require any description or illustration from me.

It now remains only to refer to a few of the improvements effected recently in midwifery, as it would be too tedious to allude to all the valuable works which have been published during the present century. And the first which attracts our attention, is the great advantage arising from Nægele's *Mechanism of Labour*, which was first brought under the notice of the profession in this country by Dr Rigby's excellent translation. By this valuable work the accoucheur has been enabled to ascertain the presentation of the child at an early period of labour, and to rectify any defect; and, in the case of necessity, to apply the forceps more easily and safely than formerly. The next improvement is also one of great value—I refer to the use of the stethoscope in midwifery. This was first suggested in this country by Dr Kennedy; but it created little attention until after the translation of Nægele's *Obstetric Auscultation*, in 1839, by Dr West. We cannot estimate too highly this instrument as a means of diagnosis in midwifery; for it enables us to ascertain at an earlier period the existence of pregnancy than we can by other means; and we can, almost without a doubt, discover by it whether the child is alive or not, which is of the utmost importance in practice. The last discovery I shall allude to brings us nearer home; and I think it requires only to be named to an Edinburgh audience, to entitle it to receive that merit its valuable properties so well deserve when judiciously employed. I need scarcely say that I refer to chloroform, which is so thoroughly known, and has recently been so fully described, that it would be presumption in me to say more in regard to it. We are naturally led to reflect, however, on the interesting fact, that the first, and some of the most important, improvements which have been effected in the science of midwifery have been the result of the talents and exertions of Scotchmen; as have been exemplified by the benefits bestowed by Smellie and Hunter. And it is pleasing to think that their mantle seems to have been left to the accoucheurs of their country; for at no time and at no place was midwifery ever practised more successfully, or more scientifically taught, than it is at present in Edinburgh.

# Part Third.

# PERISCOPE.

## SURGERY.

### RESULTS OBTAINED BY M. CIVIALE AT THE HOPITAL NECKER, IN THE OPERATION OF LITHOTRITY.

I have treated, says M. Civiale, during the year 1860, fifty-four patients affected with stone; eighteen in the hospital, and thirty-six in private practice.

*Hospital Patients.*—Among the eighteen patients admitted to my wards, three were females and fifteen adult and aged males.

The first of these females was so emaciated, and had suffered so long from the disease, that any operative interference was contra-indicated, and she was accordingly sent home.

The second was in a favourable condition so far as health was concerned; but the calculus was impacted in the urethra, where it was kept by forcible contractions of the bladder. Slitting up this canal was practised, and the stone extracted; this method appearing to me as preferable to "ecrasement," which would have been more painful and tedious. This patient speedily recovered.

The third case was one of those extraordinary instances, occurring from time to time, where a phosphatic mass was formed upon a nucleus of bones (d'osselets), teeth, and hair, derived from a cyst which had opened into the bladder. All these bodies and the rest of the stone itself were removed by lithotrity.

Among the male patients, four were not in a condition for lithotrity. Two underwent lithotomy, one being cured, the other having a fistula remaining. The third would not submit to lithotomy, which indeed offered little prospect of success at any rate; he died of a vesical attack. The fourth is still under treatment.

Another patient had, besides calculus, a strangulated hernia, requiring immediate operation. This operation was, however, followed by death.

The ten remaining cases were subjected to lithotrity, and the calculus in all removed; but a complete cure was not effected in all the cases. Two still continued to suffer from pain and disordered function in the bladder, resulting from organic disease of that organ, over which of course neither lithotrity nor lithotomy had much power.

The cases met with at the Hopital Necker seemed to divide themselves into two distinct classes; the one consisting of those where no organic lesion of the bladder or other parts, and no constitutional taint, existed—the stone alone being the cause of suffering, and that only on exercising or moving the body; the other cases consisting of those where a morbid condition of the urinary apparatus existed, and in which the stone had been of an ammoniaco-magnesian nature, and was apt to be reproduced.

*Private Patients.*—Of these patients, twenty-six had calculus for the first time; ten had already undergone an operation for it, either under my own care or under that of other surgeons, and were now requiring to be operated on a second time, in consequence of the stone being reproduced.

I operated on twenty-six by means of lithotrity; and of these, twenty-four were cured. In the other two I refused to operate in consequence of the diseased state of the bladder. One of these patients died, the other still suffers from the disease.

All the uncomplicated cases recovered easily and speedily; and I believe that in such cases lithotrity is all that could be desired. The stone is broken up in a few minutes; the debris is expelled by the urine, all suffering ceases, and health is at once restored. But no such happy results are to be expected where the calculus has had time to attain a large size, or where the form of the bladder has become altered, or any other lesions occurred. The number of favourable cases, however, seems to increase every day, as they are detected and operated on earlier.

Ten of these cases operated on by me, were not in this favourable condition, the patients having deferred any interference until insufferable pain induced them to have something done. Of these, there were two whose condition contra-indicated any operation on the bladder whatever, and who succumbed to the progress of their disease.

Four cases, where the stone was of large size, were operated on by lithotomy being performed. In one adult case the wound was cicatrized by the tenth day. In another adult the cure was less rapid, and is still incomplete. Two old patients died during the second week after the operation.

Two patients are still under treatment; the one will be operated on by lithotrity, the other by lithotomy. In two others, again, any operative interference has been postponed till spring.

On the whole, of fifty-four cases, thirty-seven have been treated by lithotrity. In two I refused to operate—one of these has since died. In two of the cases operated on the cure was not quite perfect, as complications existed along with the stone. Seven were subjected to lithotomy; and of these four recovered, but in two the cure is yet incomplete. Ten others were not operated on; and of these three have since died of their disease; one after the operation for hernia; one still labours under calculus; three are still under treatment, and will be operated on—one by lithotrity, two by lithotomy; in two cases the treatment has been delayed.

All these cases exhibit the risks attending delay, and the advantages of lithotrity when early performed.—*Gazette des Hopitaux*, Feb. 1861.

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## MIDWIFERY.

### CASE OF PUERPERAL CONVULSIONS. BY PROFESSOR BRESLAU OF ZURICH.

On the 22d of March, Maria Z——, thirty-nine years of age, pregnant for the fourth time, was admitted into the Maternity Hospital of Zurich. She was of a robust constitution, stout, well-nourished, sunburnt, and of a fresh plethoric appearance. Her three previous confinements had been easy and favourable. On the first examination, made immediately after her admission, nothing abnormal was detected. A month later, on the 25th of April, on repeating the examination, I found a considerable, symmetrical, hard swelling of both lower extremities, extending from the feet to the inguinal regions. She stated that for about four weeks she had noticed a gradual swelling of the feet, aggravated by standing, relieved by the recumbent posture, but which had never prevented her from taking her part in the house work of the institution. The patient was at the same time suffering from a severe attack of catarrh, unaccompanied by fever, but was in other respects so well that she had not thought it worth while to keep her bed. The distension of the belly was considerable; the labia majora were traversed by varicose veins, and were considerably swollen; no disease of the heart or liver could be detected; her urine was scanty and high coloured, but contained no trace of albumen. The skin of the lower extremities was of a bluish-red colour; it filled with difficulty on pressure; there was no particular varicose enlargement of the veins. I now ordered the patient to keep her bed, directed the application of bandages to her legs, and prescribed a diuretic mixture. The swelling of the feet rapidly disappeared as diuresis was established; and, on the first of May, when labour commenced, there was a mere trace of œdema. On the evening of the same day she was safely delivered of a boy, weighing seven pounds and a half.

For the five following days everything progressed favourably; the œdema was very trifling, and confined to the lower extremities; the appearance of the patient, with her child at her breast, was as satisfactory as possible. On the 6th of May she left her bed for a few hours; at three o'clock in the afternoon she began to complain of headache, which became rapidly worse, and was accompanied with bilious vomiting. At ten o'clock at night the first attack of convulsions occurred suddenly; I was sent for at half-past eleven, and saw the patient within a quarter of an hour. I found her perfectly conscious, complaining of extremely severe headache, for which ice had been applied to her head, but without material relief. After she had answered my questions, she sat up in bed, and asked for a basin; and, while in the act of vomiting, the second attack of convulsions supervened, which I had thus an opportunity of observing from the beginning to the end. Its severity was extraordinary, its duration about five minutes. The muscles of the chest, neck, and face participated to a great degree in the rapid and violent spasms which convulsed the body generally; the face turned livid; the respiration became stertorous; the mouth was at first closed, but latterly a large quantity of foam escaped from it; the eyes were sparkling, though but half opened; the pupils were enormously dilated; the pulse, which, before the attack, was 76, full, and not easily compressed, became more rapid and, towards the end of the paroxysm, weaker, though speedily resuming its previous character; the carotid and temporal arteries pulsated violently; the external jugular veins were much distended. Under these circumstances, as soon as the convulsions had ceased, I bled her to the amount of sixteen ounces, ordered the application of ice to the head, and of sinapisms to the calves and thighs, prescribed the free use of lemonade, and powders containing opium, ipecacuanha, and benzoin. After this second attack, the patient did not recover consciousness, but fell into a state of stupor, the uniformity of which was broken by fourteen other attacks of convulsions, none of which, however, was of greater severity than the second attack, if, indeed, any equalled it in violence. The third attack occurred at three o'clock in the morning; the remainder succeeded at irregular intervals, until eight o'clock in the evening.

I saw the patient early on the 7th of May, and, on account of the persistent fulness and hardness of the pulse, the redness of the face, and the heat of the body, I repeated the venesection to the amount of five or six ounces. I ordered eight leeches to be applied to the temples, and directed the other treatment to be continued. The urine drawn off with the catheter, after several of the paroxysms of the preceding night, contained much albumen, and deposited urates. I had not time to make a microscopic examination of the urine that day. I sent the blood derived from the first venesection to Dr Neukomm, a young and distinguished chemist, with a request that he would analyse it "with a special view to the detection of urea and carbonate of ammonia." On the 15th of May Dr Neukomm wrote to me, stating that "the reaction of the blood was alkaline; a search for the salts of ammonia, especially of the carbonate, had given no result. Urea was not present in any considerable quantity; there was a small quantity of sugar."

On the evening of the 7th of May, as the heat of skin and the redness and turgescence of the countenance persisted, though in diminished degree, I ordered eight leeches to be applied over the mastoid processes. At eight o'clock in the evening another convulsive attack supervened; it was the last, the sixteenth.

At mid-day of the eighth of May, the first signs of returning consciousness manifested themselves; the urine was clear and abundant, and almost free from albumen; the pulse was soft, and of normal frequency; the skin was cool and moist.

At five o'clock in the evening of the 9th of May, the patient was fully conscious, but had no recollection of the events of the previous days. The left pupil was considerably larger than the right, but the power of sight was equal in the two eyes, and there was no double vision. She complained of weariness and aching of the limbs; the breasts were much distended (the child had been removed after the first attack); the belly was soft and painless; the uterus was well contracted; the lochia were scanty; the œdema of the lower extremities had perfectly disappeared; the urine was pale, clear, and free from albumen.

From this time my patient recovered rapidly, and would have very soon been sent out of the institution, had she not, on the 18th of May, been attacked with modified small-pox, accompanied with a very moderate degree of fever, in consequence of which I had her transferred to the General Hospital, from which she went out quite well a few days afterwards. It is worthy of remark, that, on the 18th of May, the left pupil was still considerably dilated.

The principal points to be noted in the above case are the following: œdema of the lower extremities, in the last month of a fourth pregnancy, without albuminuria; speedy abatement of the œdema by means of the horizontal posture, bandaging, and the use of diuretics; a natural labour, without any untoward event, for the four following days; headache and vomiting, as premonitory symptoms of the so-called uræmic eclampsia; no carbonate of ammonia in the freshly-drawn blood, and no abnormal amount of urea; a little sugar in the blood, the result, probably, of the sudden compression of the liver; the presence of albumen in the urine after the first attack of convulsions, its speedy diminution and disappearance in the cessation of the paroxysms; finally, the decidedly good effects of a powerfully antiphlogistic treatment.

A more striking case, in opposition to the universal applicability of the theory of Frericks and Braun (retention of urea in the blood in consequence of Bright's disease, conversion of the urea in the blood into carbonate of ammonia, and the consequent production of convulsions), could not be brought forward; for the small amount of albumen present in the urine before the attack, and its speedy disappearance on their cessation, preclude the possibility of Bright's disease; while the analysis of the blood is opposed to the idea of poisoning by urea, or its product, carbonate of ammonia.

But what was the origin of the albumen after the paroxysms? I think that it was occasioned, as it certainly is in many similar cases, by the impeded circulation in the inferior vena cava, and the reaction upon the renal venis. During convulsive attacks the diaphragm is always more or less involved; and, in proportion as the muscular parts situated around the foramen quadrilaterum are more or less strongly contracted, must the vena cava inferior and its branches undergo a greater or less degree of pressure, which may be further increased by other causes, such as contraction of the thoracic and abdominal muscles, distension of the right side of the heart from impeded circulation in the lungs, and so forth. Although I am very far from denying the possibility of eclampsia being produced by uræmic poisoning, the result of previous disease of the kidneys, still I think that it would be found, on a careful analysis, that a good number of the cases of convulsions occurring in the course of pregnancy, during labour and after delivery, would be found not to be due to poisoning by urea, and that the albuminuria should more frequently be considered as the result than as the cause of the eclampsia. What, then, was the cause of the convulsions in the foregoing case? I confess my inability to answer the question. I can give no satisfactory explanation.—*Monateschrift für Geburtskunde und Frauenkrankheiten*, December 1860.

## MEDICAL JURISPRUDENCE.

### ON THE DETECTION OF ARSENIC. BY DR TAYLOR.

In an elaborate paper in the last volume of the *Guy's Hospital Reports* (third series, vol. vi.), entitled "Facts and Fallacies connected with the research for arsenic and antimony, with suggestions for a method of separating these poisons from organic matter," Dr Taylor passes in review the processes of Marsh and Reinsch, giving many useful hints as to their proper performance, and pointing out the fallacies against which the analyst must be on his guard, and especially noting that fallacy which gave such notoriety to the Smethurst trial. As to Marsh's process, Dr Taylor gives the following estimate, p. 207 :—"It may be stated that there are two difficulties which the analyst encounters in resorting to it for the separation of arsenic from the solids or fluids of the body. First, there is no good or simple method of bringing the arsenic to a concentrated state, *i.e.*, to a state fitted for testing without producing froth ; and, secondly, when the quantity of arsenic in an organic liquid is so small as to render the adoption of the process necessary, it is not possible to follow the plan of the inventor, of generating the hydrogen in the whole quantity of the organic liquid."

### REINSCH'S PROCESS.

The process of Reinsch is now rendered as satisfactory for the detection of antimony as of arsenic ; and by comparison with the process of Marsh, it is not only more delicate, but far more convenient in its application. Marsh's process may be used simply for corroboration.

In comparing the two processes for the separation of antimony from liquids, I have found that Reinsch's method is twenty times more delicate in revealing the presence of antimony than that of Marsh, as it is usually employed.

There is this difference between the two discoverers, Marsh and Reinsch—while the former suggested a useful application of facts already made known by others, the latter discovered for himself the simple fact upon which his process is based. Until within a recent period it was thought, too, that the materials used in the process of Reinsch were far less liable to give rise to fallacious results than the materials required for the process of Marsh. The investigations, however, which were carried out by Dr Odling and myself in the case of Isabella Banks (the case of 'The Queen against Smethurst,' August 1859), showed that there was a latent fallacy connected with the use of Reinsch's process, of the existence of which neither Reinsch nor any toxicologist of repute had had, up to that date, the slightest suspicion. This was the discovery of arsenic in all the best and so-called purest varieties of copper, whether as foil, gauze, or wire, and in sufficient proportion to give rise, under certain conditions, to fallacious results.

### ARSENIC AS AN IMPURITY IN COPPER.

It has been hitherto considered that one of the great advantages of Reinsch's process was that, while hydrochloric acid might easily be obtained pure, no question could arise about the impurity of copper. The presence of arsenic in the purer forms of this metal was, until 1859, either not suspected or wholly ignored by chemists of the highest authority. It now turns out that there is no kind of copper available for use which is free from arsenic; and some kinds of foil and wire hitherto used, and still employed by analysts of repute, contain arsenic united to copper as arsenide in comparatively large proportion.

In fact, whether among English or French and German writers on chemistry and toxicology, there is not one who has ever pointed out, or even suspected, that this process would lead to error by reason of the universal presence of arsenic in copper, commercial or refined, which is accessible to the chemist. All have hitherto relied upon the cleanness of the surface of the copper used, and the method of testing the acid and copper first pointed out by Reinsch. As a general rule, this is quite sufficient. There is no liability to fallacy unless the copper is used on a large scale, and there is an acid or salt present which acts upon and dissolves the impure metal. Pending its solution, the atoms of arsenic, combined with it as arsenide or arseniuret, are set free, and may thus attach themselves to the clean surface of the undissolved copper. It is clear that if the presence of a minute quantity of arsenic in copper presents that great risk of fallacy, which some chemists have recently endeavoured to impress on the public mind, no one of the numerous analyses for arsenic by Reinsch's process, which have been undertaken during the last twenty years, could have been made without the inevitable discovery of arsenic. In short, if a source of fallacy, it would have led to the constant and inevitable discovery of arsenic in every solid and liquid submitted to examination. Analysts who have had much experience in the use of this process, will bear me out in the statement, that in employing samples of the same copper and acid,—for one affirmative result in which arsenic is discovered, there will probably be four or five negative results, in which no deposit whatever has taken place on the arsenical copper, and no arsenic was detected. By boiling successive quantities of the same arsenicated copper in the same acid liquid containing arsenic, the whole of the free arsenic is finally removed; the deposits on the metal become less and less decided, they at length cease altogether, and the last portion of copper put into the liquid comes out nearly as bright as when introduced, or if at all dull on the surface, this dulness arises, not from arsenic, but from oxidation, as a result of long boiling. It is obvious, that if the arsenic came from the copper itself, and not from any extraneous source, instead of the arsenic diminishing on each introduction of the copper, it would go on increasing in proportion to the quantity of the metal employed in the analysis. The hundreds of negative results which have been obtained by experienced analysts, establish the untruthfulness of the assertion, that the process, as it is commonly employed, is attended with a serious risk of fallacy, even when copper containing arsenic is unknowingly used. The analysis performed by Reinsch, Gaultier de Claubry, Orfila, Christison, Maclagan, Geoghegan, Watson, Rey, Penny, and others, are as unassailable on this ground as those which have been performed by Mr Herapath himself, even with his No. 13 commercial wire, *i.e.*, assuming that the copper and acid have been boiled together, and no deposit formed before the suspected substance was added.

Is there any risk in employing copper containing arsenic, for separating this substance in cases of poisoning? The answer may be anticipated. There is no risk, unless the copper, during the process, is brought to a state of solution; and of this fact the operator is immediately informed by the disappearance of the metal and by the liquid acquiring a deep green colour. Hence, while the negative results which the process so frequently furnishes, afford an unquestionable proof that the copper may be used with safety, the operator has clear evidence when there is risk, by the solution of the copper in the acid liquid. If the copper employed is unaltered in weight, and is not to any perceptible extent dissolved, it is obvious that the liquid submitted to analysis cannot have received any impregnation of arsenic from the copper employed; and if, under these circumstances, arsenic is deposited on the copper, then that poison must have been present in the liquid submitted to examination. Cold hydrochloric acid, if strong and not too freely exposed to air, produces no deposit or change in the appearance of bright copper, even after forty-eight hours' immersion and exposure. Whether the copper be pure or arsenicated, there is no perceptible difference. The upper stratum of the liquid has a slight greenish yellow tint, arising from the oxidation and solution of a small quantity of copper. If the polished copper is immersed in an acid diluted with eight parts of water, it will be found after forty-eight hours that the whole of the liquid has a greenish colour, from the formation of chloride; the copper, if arsenicated, is coated with a thick dark-coloured deposit; while if pure, it is of a reddish brown colour. The surface of the metal in either case will be found much corroded, and a number of tetrahedral crystals of subchloride of copper are scattered over it. I have not been able to procure crystals of arsenious acid by heating impure copper thus coated, and I have not detected any arsenic in the acid liquid; the amount of arsenicated copper dissolved is probably too small to furnish any evidence of arsenic. These results confirm Reinsch's statement that the concentrated acid, *cæteris paribus*, exerts a less powerful action on copper than the diluted acid; they also prove that arsenicated copper should not be allowed to remain for a long time in the acid liquid. The tarnish thus formed might, unless properly tested, be mistaken for arsenic or conceal an arsenical deposit. They prove, however, that the alloy of arsenic and copper (arsenide) is not so decomposed by cold diluted hydrochloric acid, as to set free any arsenious acid in the liquid. In short, the danger of any fallacy in the ordinary use of the process, arises from the presence of arsenic as an impurity in the acid, and not from arsenic contained as impurity in the copper. But for this fact, no chemist would ever have met with negative results in employing copper in the state in which it has hitherto been used.

Hydrochloric acid, diluted with from six to ten parts of water, has but a feeble action on copper, even after long boiling. A trace of this metal may, under these circumstances, be found in the liquid. If, however, the oxide of arsenic or antimony should be present in the liquid, a portion of copper is immediately dissolved, and an equivalent portion of arsenic or antimony is deposited. So soon as the copper is completely coated, the solvent action is arrested. In order to determine how far arsenicated copper is liable to undergo solution, and to set free arsenic as a result of boiling in pure hydrochloric acid diluted, the following experiment was performed. A quantity of copper-foil and gauze, equivalent to 39·4 grains in weight, was boiled in a retort with a mixture of one ounce of pure hydrochloric acid, and eight ounces of water. The boiling was continued for half an hour, and the distilled acid liquid was collected in a cool receiver. This amounted to twelve fluid-drachms. It contained no trace of copper; and on a careful examination of the liquid by Marsh's and Reinsch's processes, there was not the slightest trace of arsenic in it. The large quantity of acid liquid left in the retort was found to contain a small quantity of copper; but there was no arsenic dissolved in it. The undissolved copper, when washed and examined by the microscope, had no metallic deposit upon it: It was unchanged in colour, but presented slight marks of corrosion. A quantity of it heated in a tube gave no sublimate.

When arsenicated copper is boiled in the diluted acid for five minutes—a period within which arsenic, if present, is commonly manifested by some deposit or change of colour on the surface of the metal—no copper is dissolved. The metal retains its usual polish and lustre. If a small portion of oxide of arsenic or antimony be now added to the boiling acid liquid, there is an immediate deposit on the clean copper surface; and copper, in small quantity, will be found dissolved in the liquid by that delicate test—ferrocyanide of potassium. It is, therefore, obvious that the metallic oxide (*i.e.*, the poison itself) brings about the solution of the copper, but not to an extent to eliminate arsenic so as to affect the process. It has been alleged that the accidental presence of certain salts, or organic liquids not containing arsenic, would lead to a sufficient solution of the copper to give rise to a deposit of arsenic on that metal. This action has been loosely ascribed to alkaline nitrates, phosphates, sulphates, and chlorides, salts which may be occasionally met with in organic liquids. A grain of each of these salts was dissolved in two drachms of diluted hydrochloric acid, in the proportions used for the precipitation of arsenic (1:8). The solution was brought to the boiling point, and boiled for a few minutes in contact with a slip of polished copper. No copper was dissolved in any one instance, and the metal retained its lustre. On adding a minute portion of arsenic to the liquid, the metallic copper was speedily coated, and traces of a salt of copper were now, for the first time, found in the liquid. When to a similar quantity of acid liquid, in which copper was immersed, a fragment of chlorate of potash was added, there was an immediate solution of a portion of the metal; a fact rendered evident by the production of a green colour, and by the application of the usual tests for copper to the liquid.

While the presence of a sulphate, nitrate, chloride, or phosphate does not affect the process, so long as a properly diluted acid is employed for a proper time, it was found that an alkaline chlorate, even in small quantity, caused a rapid solution of the copper, and, in proportion to the amount of this solvent action, a liberation of arsenic from the arsenicated copper. Owing to this chemical action of a chlorate on copper, it has been contended that Reinsch's process ought never to be employed when such a salt is present. Mr Herapath affirms that "Reinsch's process is not applicable where nitrates or chlorates are present." With respect to the nitrates, it admits of distinct proof that they present no objection when a properly diluted acid is used; and with regard to the chlorate, the process is unobjectionable, provided pure copper be used. The operator, in using copper free from arsenic, has only to saturate the liquid with the metal, and the last portion of copper put into it will effectually remove the whole of the arsenic, as well as any antimony that may be present. It is a good method of detecting minute traces of arsenic or antimony in copper; and one free from all objection, provided the hydrochloric and the chlorate are pure. The only circumstance which would render Reinsch's process inapplicable to the separation of arsenic in the presence of a chlorate, is the use of copper containing arsenic, like the No. 13 wire or the dial-plate or foil, as it is commonly sold. It is only the analyst, who has habitually and knowingly used arsenicated copper, who can treat the presence of a chlorate in an organic liquid, as a serious obstacle to the employment of this process. While, however, there is no reason to believe that the use of ordinary copper is attended with any risk in the employment of Reinsch's process, merely because it contains traces of arsenic in intimate chemical union, it may be a question whether, out of deference to public opinion, a substance containing arsenic in any form, or in any proportion, should be used for the detection and separation of this poison. In several medico-legal cases which have occurred since the universal existence of this impurity has been made known, the ordinary copper, in gauze and foil, has been employed by gentlemen who, at the time, believed they were using pure copper; they have relied for purity only on the negative mode of testing the metal suggested by Reinsch. A chemist who does this must always incur some risk, and the result may be, that a jury will be induced to reject his evidence, simply because he has employed an article actually containing the poison for which he was seeking. Whatever explanation he may give as to the non-solution of the copper, and the proportion of arsenic found being much greater than any arsenic contained in the copper which he used could possibly account for, it may always be suggested that he actually put the arsenic into the liquid. This equally applies to the use of the impure metal for the detection of antimony, as antimony is not an uncommon impurity in copper. To meet this objection, it will therefore be absolutely necessary, in future, to seek for copper free from either arsenic or antimony.

### METHODS OF DETECTING ARSENIC IN COPPER.

There has hitherto been great difficulty in detecting small quantities of arsenic in copper; and this may account for the fact, that samples of copper are sold as pure, and are pronounced to be free from arsenic, when a more careful research would have demonstrated the presence of this substance. This difficulty may be appreciated from the fact, that when samples of the arsenicated copper-gauze used in the Smethurst case were forwarded to five experienced analysts in England, Scotland, and Ireland, three succeeded and two failed in detecting arsenic in it. A sample of Burra Burra copper supplied to the Royal Mint as absolutely free from arsenic, was found (by a process to be presently explained) to contain traces of that substance. Some Swedish copper which had been reserved as pure by a distinguished chemist, was found, on analysis, to be arsenical. The detection of the arsenic depends entirely on the method pursued.

The first plan which I adopted successfully, consisted in oxidizing the copper by nitric acid, evaporating the acid liquid to dryness, and then heating the residue to procure the black oxide, and, at the same time, to convert the arsenic, if present, to arsenic acid. This acid was subsequently detected in the residue by digestion in water, and the addition of nitrate of silver.

Another plan, proposed and employed by Dr Odling, clearly showed the presence of arsenic in a small quantity of gauze, foil, or wire. The copper was entirely dissolved by the aid of hydrochloric acid and a weak solution of chlorate of potash. The surplus chlorine was removed by the gradual addition of small quantities of bisulphate of soda, and the sulphurous acid derived from this salt was removed by boiling,—the freedom of the vapour from the acid being indicated by holding in the current, starch-paper saturated with iodic acid. Reinsch's process was then applied to the liquid, and if the copper under examination contained arsenic, a deposit of arsenic was obtained in the usual way on a piece of copper.

There is no chemical objection to this method; but seeing that several substances are employed in the analysis, and that a mixture of salts resulted, it appeared to me preferable to convert the copper to a soluble chloride by digesting it in pure hydrochloric acid alone, and then, from the known volatility of chloride of arsenic, to separate this from the chloride of copper by distillation. For this purpose, I found it necessary to expose the copper in a stratum of pure and concentrated hydrochlorate acid contained in a saucer, the metal being partly immersed in the acid and partly exposed to the air. After two or three days' exposure, according to the thickness of the metal, a brown liquid (a solution of subchloride of copper in hydrochloric acid) was obtained. In some experiments, the copper was entirely dissolved; in others, a portion was left. The weight of the residue, after washing and drying, deducted from the original weight employed, gave the amount of copper dissolved. The brown liquid was distilled to dryness in a flask or small retort, placed in a sand-bath, and the vapour was condensed in a flask or receiver containing a small quantity of distilled water. A perfectly clear solution of chloride of arsenic, or a mixture of hydrochloric and arsenious acids, was thus procured. When one part of this distillate was diluted with its volume of water and boiled, and a small piece of pure polished copper was introduced, the presence of arsenic was speedily indicated by the characteristic deposit on the bright metal. Another portion of the liquid was introduced into a Marsh's apparatus, or a small flask with a bent tube fixed in its neck, and by the addition of pure zinc, arseniuretted hydrogen was easily procured from it and tested. When to a third portion a solution of chloride of gold was added, and the mixture boiled, the gold was, after a time, completely deposited. The weight of gold thus deposited supplies one method of calculating the quantity of arsenic present in the distillate.

Of the delicacy of this process for detecting arsenic, there will be, I think, no doubt on the part of those who try it; and it has this important advantage over other methods, that, excepting the copper, the purity of which is to be tested, and hydrochloric acid, the purity of which may be easily determined by a preliminary experiment, no chemical is used. It is equally applicable to the detection of minute traces of arsenic in the sulphate and all the salts of copper, soluble or insoluble. It is only necessary to distil them with a sufficient quantity of pure hydrochloric acid. I had in vain sought for evidence of arsenic in some sulphate of copper by the use of Marsh's process; but on distilling only ten grains of the crystals with hydrochloric acid, chloride of arsenic was obtained in the receiver, and the presence of the poison was satisfactorily proved. In the course of the Smethurst analysis in July 1859, Mr Brande and Dr Odling adopted, at my suggestion, this method of analysing some sulphate of copper pills for arsenic, and they both expressed their satisfaction with it as a safe and delicate process.

### CRIMINAL ABORTION IN THE UNITED STATES. BY J. M. TONER, M.D., OF WASHINGTON.

I was recently summoned to attend the sick-bed of a highly-accomplished female, whose life was in imminent danger from inflammation consequent upon a recent abortion. She was so ill that consultation with one of the most eminent and experienced practitioners of this city was deemed necessary. The abortion, too, was produced at her own solicitation by a man calling himself a doctor, and practising one of the many systems of quackery which are too often a mere cloak for their nefarious trade. This one is actually patronized by some families of respectability having faith in his theory and exclusive practice. When severe suffering and disease had sufficiently alarmed and awakened this woman, and those around her, to her real danger, and compelled her to send for a regular physician, she reluctantly made him acquainted with her true condition and its cause, and confessed the name of the man who aided her in her criminal design. But, even when she believed it impossible for her to recover, she could not be influenced by her physicians to give testimony before a magistrate that would fasten guilt upon the man and corroborate what she had told us, for we were eager to have him arrested and prosecuted.

She recovered, and we have to remain silent. Had she died, her body could have been produced as testimony against him. Her recovery was slow, and attended with the usual penalty—a constitution permanently injured. This case, in connection with other facts of my professional experience, induces me to believe that a few remarks upon the moral and physical evils arising from the fearfully frequent practice of premature labour or abortion will not prove uninteresting to the profession, nor unprofitable to the community at large. There is a wicked and very prevalent opinion pervading society, particularly certain classes, that "there is no harm or crime in abortion if it is produced before quickening." Indeed, it is not uncommon for a married woman, who does not wish to have her family increased, or attend to the wants of her offspring, and thereby forego the pleasures and freedom of society, to make use of some effectual means of causing the death of the fœtus. The code of medical ethics, the high sense of honour characteristic of our profession, as well as the moral law, alike forbid us to pander to the depraved sentiments, or to succumb for the love of gain to the unnatural demands either of weak or erring unmarried females, or the fashionable wives, whose sole happiness seems to depend upon their being seen upon the public promenade, and participants in the desultory pleasure of ball-room excitement. We are likewise forbidden to listen to the cry of anguish and distress of weak and confiding woman, who could rashly commit a greater crime to prevent the publicity and hide the shame of a lesser.

Who will presume to say at what point of time existence begins in man? Morally considered, it is of no importance whether the murderous hand is raised to destroy the seed of man in its incipient germination, or in its ethereal or more refined existence, or when it is physically matured. There is not a doctor of any considerable practice in any of our large cities who is not approached for this very purpose. Unfortunately, there are means, both mechanical and medicinal, known to females, which are frequently used, and whose effects are manifested only when it is too late to save the child. The life of the mother is in great danger. Indeed, premature labour is not sought by females only to hide their shame of illicit intercourse. Married women wishing to travel, or to enjoy the freedom of society, either with or without the consent of their husbands, determine on abortion.

Fearful to approach her family physician for such a criminal purpose, she will go secretly to some young man just starting in his profession, in the hope that a large fee and the practice of an influential family may overcome the firmness and decision of character which ought to enable him to reject such an overture. Or, she may address by letter some one of the many quacks whose shameless advertisements may be seen in almost every paper of the present day, hardly excepting the religious ones, and she will be supplied with means and instructions how to carry out her wicked purpose. Or, if wealthy, and circumstances permit, she may visit some other city; for I believe these heartless Herods, of both sexes, are a curse found in all large cities.

The decision of the courts and the opinion of the profession have been so feebly expressed, or impotent, that many good men in the profession, and nearly all out of it, do not see and feel its criminality. Many are restrained from its practice only by the fear of legal prosecution or the ethics of the profession, which, God knows, are both too insufficient to prevent irregularities. But a short time since, a lady, the wife of a merchant doing a profitable business in this city, called on me in my office, and said, "I wish to speak with you professionally, and to know if I can rely upon you keeping the matter of the consultation sacredly secret?"

"Certainly, madam, in everything that is proper in the profession or personal to yourself."

"Well, I can trust you, I suppose, and it is this: I am about three months gone in pregnancy, and I have made up my mind that I will not slave myself to death with another child."

As she spoke her eyes flashed, and her voice and manner evinced her positive determination to do as she said.

Looking her steadily in the face, I said, "Madam, are you aware that wilfully to cause an abortion is a criminal offence—murder to all intents and purposes?"

"Nonsense, doctor, there is no life yet, and a great many persons do so and think it no harm, nor do I; you need not be afraid. Do you see this arm?"

"Yes, certainly."

"Well, rather than speak one word that would get you into trouble, I would cut it off at the shoulder."

"You mistake your man," I replied; "I have not the slightest intention to put myself in any danger of the kind, as I firmly believe it to be murder, whether you destroy life at the age of one day or fifty years."

"Doctor, I do not believe it is a crime, for God cannot wish to afflict us with the suffering and denials that it compels a woman of my age and tastes and position to undergo. But, crime or no crime, I am fixed in my resolution not to have another child; so you may as well make a good fee, and be henceforth our family physician."

I answered very positively that no consideration would induce me to become a party to her criminal designs, and I moreover assured her that I would closely watch her course, and, if need be, appear as a witness against her if she persisted in her scheme of folly and crime. She left my office without evincing the slightest change in her wicked determination. What has been the result I cannot say, but I fear the worst. I can recall ten similar applications within the last three years, about one-half of them being made by married women, and some of them by husbands in behalf of their wives; and I have no doubt but that this will accord with the experience of other physicians in practice.

All large cities have dens of wickedness and crime, where premature labour, with its concomitant evils, is frequently produced. In fact, it has become a regularly-established money-making trade—carried on by both sexes—and its deluded victims, poor, nervous, pale, and sallow creatures, mere skeletons of what they once were, are daily seen upon our thoroughfares, or visiting fashionable and reputed health-restoring resorts. That the life of the mother is greatly endangered by induced labour no well-informed physician can doubt, and, likewise, it is certain that the life of the child is rarely saved, even in the later months of pregnancy.

It is not necessary to collect here the opinions of the most eminent writers, whose teaching and experience prove conclusively the great risk and hazard of life; and that, in all cases, disease is established as a consequence of interfering with the highest and healthiest law of nature—that of reproduction. There is no practitioner of any experience who is not familiar with cases of nervous sufferers, with ruined constitutions and uterine diseases, induced or greatly aggravated by abortions, whether accruing by accident or design. Yet, is it not astonishing that men of learning in a profession eminently humane and philanthropic, will assert, in courts of law, that an abortion produced at three months is not more serious to the mother than natural labour at full term?

The recklessness of this assertion is certainly commensurate only with the unpardonable want of honesty of him who made it. If such opinions are acted upon, what crimes will it not encourage, and what sufferings and misery will it not entail? We rely upon the virtue and good sense of the profession to render such doctrines powerless. But the asserter of them is morally guilty, and should be treated as a nuisance, alike dangerous to the health and morals of society. Unfortunately, our laws are so lax and so lamely administered, that it is next to impossible to convict abortionists. They are cautious and prudent in their speech and actions, and make confidants only of those whose acts, intentions, or principles, render them, to a certain extent, participants in the crime. Criminal law makes an unjust and assumed distinction as to the extent of the crime of abortion, depending entirely upon the stage of development of the fœtus; thus, in some States, punishing only as a misdemeanour what is murder in fact and in morals. The profession is not doing its duty when it permits such false and groundless assumptions to bias the decisions of courts, and shield and give a silent sanction to crime. In regard to these matters, I hope to see a higher moral tone disseminated among the people, acted up to more conscientiously by the profession, and a wilfully causing of abortion declared by law to be murder, and rigorously punished as such by the legal tribunals.—*Phil. Med. and Surg. Reporter.*

# Part Fourth.

## MEDICAL NEWS.

### MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XL., 1860–61. MEETING VI.

*Wednesday*, 3*d April* 1861.—BENJAMIN BELL, Esq., President of the Society, in the Chair.

#### I. TUMOURS OF THE SUPERIOR MAXILLA.

*Professor Miller* showed two tumours of the upper jaw, which presented a remarkable contrast to one another. Members of the Society were aware that tumours of the jaw were of two kinds, malignant and non-malignant; that in the case of the latter, no matter how large the growth, and no matter how long it had existed, it might be operated on with every prospect of success,—the surgeon might safely remove the whole maxilla, knowing that, in doing so, he removed the whole disease. So satisfactory was the operation, that Mr Miller did not know of a case which had proved fatal, or where the disease had returned. The soft or malignant form of tumour, on the other hand, when of any size externally, had generally extended so deeply as to render complete removal impossible, having laid hold of the base of the skull, and being, of course, inaccessible; consequently, in this form of disease the surgeon seldom interfered. The malignant tumours might, however, be divided into two varieties, according as they were more or less favourably situated. Of the more favourable variety, the *first specimen*, which had been removed by operation by Dr P. H. Watson, was an example. It had evidently not begun behind, or even in the antrum, but had its origin in the external surface of the periosteum, and had grown backwards into the substance of the bone. The operation had been performed about three months after the first appearance of the tumour. The jaw was removed, and it was found that the whole disease had been removed with it; the issue had been quite favourable. The patient, it might be added, was a woman between 40 and 45 years of age.

The *second specimen* presented a contrast to the first. The subject of the case was a man of 50; the tumour had existed about three months, and had grown from behind forwards. The front of the bone was intact, half of its palatine surface was involved, but the chief mass was behind. There was great difficulty in making a satisfactory examination, for the mouth could scarcely be opened so wide as to admit one finger, and even this caused great pain.

When admitted into the hospital, there was a suspicious thickening behind the angle of the jaw, which, however, disappeared to a great extent under rest and soothing applications. From the first, Mr Miller entertained an unfavourable impression of the case; indeed, the man had the malignant cachexia stamped upon his countenance. Still, as in Mr Miller's own opinion, and in the opinion of his colleagues, there was a possibility that the disease might be entirely removed; and as the man, when the whole circumstances had been explained to him, gave an intelligent consent to the operation, excision of the upper jaw was performed. When the bone was removed, it was found that a portion of the tumour had been left behind, evidencing an affection of the base of the skull, and probably also of the inferior maxilla. The case was thus evidently beyond the reach of surgery ; and the operation, of course, had done no good. Still, Mr Miller had acted according to the great principle in medical ethics, that, wherever there was a chance of doing good to the patient, the surgeon should operate, even at the risk of his own professional reputation. The case was instructive as confirming the principle, that, in osteo-cephaloma of the upper jaw, we cannot be too cautious in operating, especially where the tumour has grown from behind forwards.

*Mr Spence* had seen the last mentioned patient; and, though not sanguine as to the result of an operation, had considered that the principal chance of success lay in the circumstance that there was no protrusion of the eyeball. When the disease commences in the ethmoid cells, one of the first symptoms is the pressing of the contents of the orbit upwards and outwards. In the above case, the chief contra-indication of operation was the state of the parts about the lower jaw.

### II. MALIGNANT DISEASE OF MAMMA.

*Professor Miller* showed a mamma which he had removed from a middle-aged woman on account of a tumour which had existed for six or eight years. The specimen showed three things:—*First*. The disease had begun in the nipple; the mamma had remained uninvolved (it had, however, been considered safe to remove the whole gland). *Second*. The disease had originally been scirrhus, but the tumour had become softened. *Third*. It was an example of nature's efforts at spontaneous cure by enucleation, even in the case of malignant tumours; the fungating portion had been nearly extruded, the base being formed by the healthy mammary gland.

### III. GELATINOUS DEGENERATION OF KNEE-JOINT.

*Mr Spence* showed a specimen illustrative of a rather unusual termination of gelatinous degeneration.

Patients in the lower ranks who were the subjects of this disease, were seldom permanently cured,—the disease, though apparently cured, frequently recurring, and finally extending inwards and producing ulceration of the cartilages. In the present case, the patient had been under Mr Spence's care six or seven years ago on account of synovial disease (gelatinous degeneration) of both knee-joints. He was a lad of a very strumous constitution, but, under prolonged treatment, had recovered. He remained well for some years, and was seen occasionally. Lately, he was readmitted into the hospital, with one knee evidently in a hopeless condition; the other, however, being quite sound. From the history of the case, it was presumed that the disease had extended inwards, affecting first the synovial membrane, then the cartilage, and finally the bone. The thigh was amputated by the long anterior flap; and, on dissecting the joint, Mr Spence was surprised to find that the gelatinous degeneration of the synovial membrane was cured, but that strumous disease had recommenced in the interior of the lower part of the femur and of the head of the tibia, and had thence extended to the cartilages. This was evidently a new disease; and, accordingly, Mr Spence was more hopeful regarding the other knee, as probably the synovial membrane remained sound.

### IV. EXOSTOSIS OF THE FIBULA.

*Mr Spence* showed an exostosis which he had removed from the fibula of a young lady. The growth had caused great deformity. The principal peculiarity was, that it had an unusually broad base. The exostosis, as usually happens, was covered with cartilage and was surrounded with a bursa.

### V. CANCROID DISEASE OF PENIS.

*Mr Spence* showed a specimen of cancroid disease of the penis, on account of which he had performed amputation. One peculiarity in the case was, that a long string of dense matter accompanied the dorsal vessels, and extended even to the integuments of the abdomen. After the amputation of the penis, this band was dissected out.

### VI. MALIGNANT DISEASE OF EYEBALL.

*The President* showed a specimen of malignant disease of a melanotic character, on account of which he had, some time ago, removed the eyeball. The subject was a middle-aged woman. The disease did not quite fill the globe; and, previous to the operation, there seemed every prospect that the result would be satisfactory. After the eyeball was removed, it was noticed that there was a suspicious appearance at the side of the optic nerve; and, on introducing the finger, the remaining contents of the orbit had an unsatisfactory feeling. Accordingly, a good deal of cellular tissue and fat were removed. All did well till a few days ago, when it was noticed that the eyelids were distended, and there was every reason to believe that the disease had returned.

### VII. EXTREME CONTRACTION OF THE AORTIC ORIFICE.

*Dr Haldane* exhibited a heart, in which the aortic orifice was very much contracted. In the absence of Dr Laycock, under whose care the subject of the observation had been, Dr Haldane read the following notes of the case:—

"The patient, a man aged 69, was admitted into the clinical ward, suffering from great difficulty of breathing. The cardiac sounds were feeble and distant; a faint murmur, soft in tone, was heard with the first sound at the base of the heart; subsequently, a murmur was heard at the apex. The pulse was visible at the wrist; it was small, and varied from 96 to 120. There was venous turgescence in the neck, especially on the right side. There was œdema of the face, abdomen, and limbs. The urine was albuminous. While in the hospital, dyspnœa was persistent and distressing, but aggravated paroxysmally. Death occurred suddenly, after considerable hæmoptysis."

On *post-mortem* examination, the heart was found much enlarged, weighing 21 ounces, the walls of the left ventricle being greatly thickened. The aortic valves were found competent when tested by passing a stream of water down the vessel; but the aortic orifice was so contracted, that the point of the little finger could barely be passed from the ventricle into the commencement of the vessel. On examining the heart, it would be observed that, at first sight, there seemed to be only two aortic valves, the right and left valves being so far fused together that no septum was visible on the ventricular surface; the septum, however, existed internally, and was converted into a mass of solid calcareous matter. All the aortic valves had undergone calcification to such a degree as to admit of very little motion. There was a little calcareous matter around the orifice of the mitral valve, and there was a patch of the same matter in its anterior flap, but the perfect closure of the valve was probably not interfered with. There was little or no atheroma of the aorta. Both lungs were œdematous, and there was extensive hæmorrhagic extravasation into their lower lobes.

*Dr Haldane* remarked, that it was not common to find contraction of the aortic orifice dependent upon thickening or calcification of the valves, when they were at the same time competent. The faint and soft character of the murmur heard during life was, no doubt, dependent upon the very small quantity of blood which could pass at each systole from the ventricle into the aorta.

### VIII. HÆMORRHAGE INTO CORPUS CALLOSUM.

*Dr Haldane* showed a specimen of this very rare lesion. A man, about 60 years of age, of intemperate habits, fell down some steps and struck his head against a door. He was brought into the hospital in a state of concussion, from which he did not recover, but died about 24 hours after admission. On *post-mortem* examination, a scalp wound, extending down to the bone, was found behind the right ear. There was no fracture of the cranial bones. When the brain was removed, a few drops of blood were found lying on the dura mater which lines the middle fossa of the skull on the right side. On slicing the brain, two or three small hæmorrhagic extravasations, about the size of pepper-corns, were found in the substance of the corpus callosum. There was a small superficial clot in the left corpus striatum; and a similar lesion was found in each optic thalamus.

*Dr Haldane* remarked, that hæmorrhage into the corpus callosum was, as an idiopathic lesion, almost, if not quite, unknown; while, even as the result of injury, it was very rare except in cases where there was extensive disorganization of the brain. In the present case the different hæmorrhagic extravasations had no doubt been the result of injury, but they were extremely limited in extent; and it was certainly remarkable that a comparatively non-vascular part like the corpus callosum should be one of the seats of the lesion. The material lesions of the brain did not seem to be sufficient to account for the fatal result; in fact, as indicated by the symptoms observed during life, the individual died from concussion, having never recovered from the shock of the fall.

### IX. MEDULLARY DISEASE OF THE EYEBALL.

*Dr Watson* showed a specimen of medullary disease of the eyeball, for Dr Bell of St Andrews. The disease in this case had obviously originated in the nervous structures of the globe; and, extending forwards into the vitreous humour, it had produced absorption of the lens, and had latterly given rise to a staphylomatous projection of the sclerotic and cornea. This having ulcerated, profuse hæmorrhage demanded the removal of the globe, that the bleeding might be satisfactorily arrested. In effecting this extirpation, the mass of the tumour, with the contents of the globe, were accidentally evacuated, showing how slender a connection subsisted between the growth and the fibrous tissues of the globe.

Dr Watson believed that the fact of the origin of these medullary tumours of the eyeball, in the majority of cases from the optic nerve, served to account for the very unfavourable prognosis which all practical surgeons had been forced to come to with regard to extirpation of the eyeball in cases of medullary disease. For, by the time the characters of the disease had become obvious, the tumour had come to affect the anterior part of the globe; it had also extended backwards along the neurilemma of the optic nerve, not perhaps in the form of a distinct tumour, but still to such an extent as to render the *complete* and thorough extirpation of the disease impossible. The speedy return of the disease, therefore, within the orbit is only what might be expected to occur in a large proportion of cases. By removing the eyeball, however, even when a cure was impossible, the intolerable pain from which most patients suffered was removed; and in cases like the present, where the disease had attained its third stage, the death of the patient from hæmorrhage was, at all events, temporarily delayed.

### X. ON THE USE OF ALCOHOLIC STIMULANTS IN HOSPITAL MEDICAL PRACTICE.

*Dr W. T. Gairdner* read a paper on the above subject, which will be found at page 961 of the present number of this *Journal*.

*Professor Miller* would express his thanks to the author of this paper, with whom he quite agreed that the subject was one of great importance, and which required extensive and systematic inquiry. He himself did not wish to take an extreme part in any discussion on this subject; and he preferred to style himself a *Nephalist*, this term not being indicative of an extreme position. He was indeed glad to say that he had often been taken to task as not being half strong enough in denouncing the use of alcohol under any circumstances. There were not a few who objected to the use of alcohol even as a medicine; but Mr Miller looked upon their opinions as absurd. It would have been as rational in the Chinese authorities to prevent opium from being used as a medicine because it had been abused to a great extent, as for a medical man to refuse to prescribe alcohol as a remedy because it was too freely indulged in by the healthy. While deeply thankful to Dr Gairdner for his paper, Mr Miller would, however, venture upon one or two observations.

Dr Gairdner had stated that he ordered his patients wine in preference to spirits, although the former was more expensive, and more uncertain in its action, because more uncertain in its composition, than the latter. Now, according to the conclusions arrived at by Lallemand, Perrin, and Duroy, it was quite clear that, in the case of wine, the alcohol contained in it was the active ingredient. Genuine wine, it was true, contained many other ingredients; but when you ordered wine, you really did not know what you gave. Thus, in the case of port wine, more was used in this country alone than was made in Portugal, and more than, according to the fiscal regulations, could possibly be exported. Of what was sold as port, a great deal was so doctored that it had none of the properties of wine.

Mr Miller also demurred to giving wine in preference to spirits because the patients thought more of it. He considered it an erroneous principle to give as a medicine what was prized as a luxury. In fact, some teetotallers who gave alcohol invariably medicated it (by mixing with it aloes, assafœtida, etc.), so as to give their patients a distaste to it. But, without going this length, Mr Miller would prefer giving diluted alcohol, as being more certain in its operation, cheaper, and less liable to adulteration than ordinary wine.

Mr Miller also took exception to Dr Gairdner's opinion that alcohol was a tonic. He was at a loss to see how this could be made out. Lallemand, Perrin, and Duroy had showed that it had a special effect on the nervous system, which it overstimulated, and that it was then expelled unchanged; but there was nothing which could strictly be viewed as a tonic action.

Mr Miller was thankful to Dr Gairdner for having spoken so plainly as to a monomania which had for some time prevailed, more especially in the south, with regard to the therapeutical employment of stimulants. He had hitherto only been restrained by the fear of his motives being misunderstood, from lifting up his voice against a practice which he looked upon as destructive in every way, to both the body and the mind. Mr Miller knew, from what he had himself seen, that the practice of stimulation was by some carried to great excess. One of his patients, suffering from dropsy and disease of the heart, on his return from the Continent, passed through London, and consulted a physician, who recommended him to drink sherry during dinner, and a whole bottle of port after it. An eminent physician in another case prescribed "Brandy, brandy, brandy;" the only limit to the quantity to be taken being, that the patient should go to bed sober. Not long ago, Mr Miller was informed by a gentleman who had been under the alcoholic treatment in the south, that he consulted a medical man there, one forenoon, between one and two o'clock. Having heard the symptoms detailed, the practitioner rang his bell, and ordered his servant to bring in brandy, asking his patient at the same time whether he preferred it "hot or cold." The patient replied, "cold." Accordingly, brandy, cold water, and two tumblers were produced. The practitioner poured some brandy into a tumbler, and mixed it with cold water for the patient, and then did the same for himself, and the two hob-nobbed together. Presently the doctor asked the patient how he felt; if he was not better, more comfortable. The patient confessed that he was. "Very well," said the other, "do this occasionally, as often as you feel uncomfortable." Mr Miller mentioned these facts to show to what an extreme the system of alcoholic dosing had in some hands been pushed; and how desirable it was that the attention of the profession should be directed to the matter, with a view to rectification. He earnestly hoped that this would be one benefit accruing from Dr Gairdner's paper.

### XI. ON THE RADICAL CURE OF HERNIA.

*Mr Edwards* read a paper entitled, "Note on the History of Radical Cures for Hernia."

*Professor Miller* observed, that the great objection to the various radical cures of hernia which had been suggested, was the temporary character of the relief afforded. In many cases the individual seemed to be cured; but, on returning to active employment, the hernia was reproduced.

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## PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

### SESSION XIX.—MEETING VI.

*March* 14, 1860.—Dr Keiller, *President*, in the Chair.

### I. NOTENCEPHALOUS FŒTUS.

*Dr Bruce* showed a preparation of a notencephalous fœtus which he had just delivered. It was a male child, but only one testicle had descended, and the penis was in a very rudimentary condition. It was a first child, and was born dead; the placenta, which was broken up into a number of "scattered" portions, having been separated before the delivery of the child. The umbilical vessels spread out in the membranes before running into the various placental lobules.

### II. CASE OF ACCIDENTAL HÆMORRHAGE.

*Dr James A. Sidey* read the following notes:—

Mrs D., æt. 32, 5th child, was last unwell on the 15th of July. Has enjoyed good health generally. On Monday morning, about 8, was very much frightened by an accident occurring to a child, and felt sudden pain over the pubis, with faintness, which soon passed off. After this she was able to go about her usual duties pretty well, with the exception of occasional giddiness, till 4 P.M. on Tuesday, when she was suddenly seized with hæmorrhage, and I was sent for.

She states that she felt the movement of the child up till Monday night, when it fell "like a cold brick in her inside." On arrival, I found that a considerable quantity of blood had been discharged on the floor; she was very pale and faint, and complained of great pain and a feeling of great distension at the lower part of the abdomen. On examination, I found the os of about the 8th month, firm and hard, admitting one finger. I watched her for a short time, and, finding no great discharge of blood, did not interfere. In about an hour she began to feel pains, which lasted up till 8 o'clock, when they ceased, but began again about 12. Labour then proceeded favourably, when, about 5 on Wednesday morning, the membranes were ruptured, and the child born dead about 6 A.M. No hæmorrhage followed the birth of the child, but, on extraction of the placenta, several large clots were discharged; no further hæmorrhage occurred. On examination of the placenta, it showed that separation had taken place towards one edge, but only a small portion. On the child, the skin of the knee is abraded, which is very soon (36 hours). Occasional doses of ergot were given.

The placenta, which was still in connection with the fœtus, had evidently been separated from the uterus, as one portion of it was very firm and compressed-looking. Dr Sidey further called attention to the circumstance, that the cuticle of the fœtus had begun to peel off, although it could only have been dead 36 hours.

### III. RUPTURE OF THE UTERUS.

In the absence of *Dr Dunsmure*, the secretary read the following notes:—

On the 12th of January 1855, I was asked to attend Mrs H., æt. 39, of her 8th child. She had previously enjoyed pretty good health, but was puny, and not of a strong constitution. On arriving at her house about 1 A.M., I found that she had been in labour since 11.30 of the previous night, and that for the last hour the pains had been very severe. On examination, she complained of great tenderness, and I could not ascertain the exact presentation; but I detected the head high up and lying on the pubis. Wishing to make a more exact examination, I sent for chloroform; during her husband's absence, who went for it, I sat at her bedside, and observed that the pains showed no peculiar severity; on a sudden she screamed out with a pain in the left side. I immediately placed my hand on the part, and thought I felt the foot of the child, and suspected that rupture of the uterus had taken place. She became faint and sick. At this time the husband arrived with the chloroform, which I immediately administered; on introducing my hand after a little gentle pressure, I found the child's head enormously enlarged, and the cranial bones completely separated; in fact, the head was hydrocephalic. Not having any other instruments, I, using my left hand as director, inserted a scalpel into the child's head, when a very great quantity of fluid was evacuated. I then introduced my hand into the uterus, took hold of a foot, and with great ease delivered her of the child. The uterus contracted pretty well, with a proper discharge of blood. On making an examination to ascertain the detachment of the placenta, I found the whole uterus filled with intestines. I therefore allowed the placenta to remain, seeing that the poor woman was fast sinking. She died in great agony about 12 hours after.

### IV. TURNING IN ARM PRESENTATION.

*Dr Keiller* gave the history of a case of arm presentation, in which turning had been had recourse to.

*Dr Alexander R. Simpson* had been told by Dr Hutchison of Bridlington, that that gentleman had on one occasion succeeded in pushing up the shoulder, and thus changing a transverse into a head presentation, in a case where the first stage was already completed.

*Dr Bruce* had himself succeeded in changing the position of the child in this way, but before the membranes were ruptured.

*Dr Keiller* remarked, that so long as the membranes were entire, and more particularly in cases of pendulous uterus, changes in the position of the fœtus could easily be effected, even by the simple injection of water, as was sometimes seen in attempting to induce premature labour by Cohen's method.

### V. CONGENITAL ABSENCE OF THE GALL-BLADDER.

*Dr Alexander R. Simpson* showed a preparation of the liver of an infant, in which no trace of a gall-bladder could be detected. Dr Simpson stated, that when he first saw the child, it was about four weeks old, and was suffering from what seemed to be an attack of erysipelas of the lower extremities. On more careful examination of the child at the next visit, however, it was found that not only the legs, but also the arms and face, were swelled and hard; and the indurated patches presented all the appearances of parts affected by sclerema, rather than the ordinary erysipelas. There was no albuminuria. Under the use of iodide of potassium and chlorate of potass, internally, and warm applications to the parts, at first the child seemed for a time to be doing well. But a fortnight after the commencement of the disease, it began rather suddenly to vomit its milk, and to show decided symptoms of collapse; and, notwithstanding the free use of stimulants, it died two days afterwards. On making a *post-mortem* examination the skin was found to be intensely indurated in patches all over the legs, hips, arms, and cheeks; and when incisions were made into these parts, there flowed out a pale, faintly straw-coloured fluid, which, on standing, presented a fibrinous coagulum. A small orifice yielding pus was noticed on the middle of the back, opposite the spine of the ninth dorsal vertebra, which was found, on passing a probe through it, to communicate with a large cavity underneath the skin, of a lozenge shape, and extending in a longitudinal direction from a point opposite the spine of the fifth dorsal vertebra above, to another opposite the fourth lumbar vertebra below, and laterally between the levels of the angles of the ribs. In this extended space, the subcutaneous cellular tissue was all destroyed, only some fibrous bands containing vessels and nerves still connecting the skin with the aponeurosis of the back. The thoracic organs were perfectly healthy and natural; the lungs everywhere fully distended and filled with air. The abdomen contained about a tea-cupful of yellow serum, intermingled with fibrinous flocculi. The intestines were injected on the surface, of a pale roseate or pink colour, and matted together at parts with fibrinous deposits. These fibrinous exudations were also seen on the surface of the pelvic organs, and on the surface of the liver and spleen. The spleen and kidneys were healthy. No albumen could be detected in the few drops of water present in the bladder. The gall-bladder being "conspicuous by its absence" from the lower surface of the liver, that organ was carefully removed, along with the spleen, stomach, duodenum, and diaphragm. It was found to be almost encased by a thick yellowish layer of fibrine, by means of which it was loosely bound to the diaphragm. As the members of the Society could observe, there was no trace of the existence of a gall-bladder on the lower surface of the liver, nor was there any depression corresponding to its usual site. The left lobe of the liver was nearly of equal size with the right; and although on the latter there was a faint attempt at the formation of a lobulus quadratus, there was no l. Spigelii or l. caudatus whatever. The right and left lobes were united by a thick pons hepatis over the course of the ductus venosus, so that the latter appeared to penetrate the substance of the liver. On laying open the duodenum, the orifice of the bile duct was at once seen in its ordinary situation, and a single drop of pale bile could be expressed from it. On tracing this duct to the liver, it was found to pass up undivided into the horizontal fissure, where it broke up at once into the hepatic tissue of the right and left lobes.

## UNIVERSITY OF EDINBURGH.

### MEETING OF GENERAL COUNCIL.

The half-yearly meeting of the General Council of the University of Edinburgh was held on Tuesday, 16th April, in Queen Street Hall. The platform was occupied by the members of the University Court and the Senatus in their academic robes, and from 200 to 300 members were in the body of the hall. Sir David Brewster, K.H., D.C.L., Principal and Vice-Chancellor of the University, presided. The members of the University Court present were—Dr Alexander Wood, Chancellor's assessor; the Solicitor-General, assessor of the General Council; Professor Christison, assessor of the Senatus; and Dr John Brown, assessor of the Rector. There were also on the platform—Professors Crawford, Swinton, Bennett, Pillans, Aytoun, Blackie, Kelland, Balfour, Simpson, and Lyon Playfair; Mr Smith, Secretary of the University; and Mr Small, Librarian.

Professor Crawford opened the proceedings with prayer, and Mr Smith read the minutes of last half-yearly meeting, which were approved.

Representation of the Scottish Universities.—The following deliverance of the University Court was read:—"The Court having taken into consideration the representation by the General Council of the University in regard to the Scottish Universities being represented in Parliament, is of opinion that the question is surrounded with so many difficulties, and gives rise to so much difference of opinion, that it is inexpedient for the Court to take any action in the matter in the manner suggested by the General Council."

A lengthened discussion ensued, in which the Rev. Mr Phin, the Solicitor-General, Professors Aytoun, Blackie, Bennett, and Campbell Swinton, Mr Boyle, and Sheriff Hallard, took part. The following motion, proposed by Mr

BOYLE, and seconded by Professor BENNETT, was finally carried by a large majority, notwithstanding the opinion of the Solicitor-General, in accordance with the views formerly expressed by Mr Gladstone, that the University Council, as well as the University Court, had no power to petition Parliament in a corporate capacity :—" That the General Council resolve to petition Parliament in favour of the proposal to give one of the vacant seats to the Scottish Universities, and request the Principal to prepare such a petition, and authorize him to sign it in name of the Council, and transmit it for presentation to the Rector of the University."

The three following deliverances of the University Court were next read, but gave rise to no discussion :—

CHAIR OF POLITICAL ECONOMY.—" The Court coincides in opinion with the General Council, as to the desirableness of a separate Chair of Political Economy being founded in the University of Edinburgh, provided a suitable endowment for it can be obtained."

ENTRANCE EXAMINATIONS.—" The Court is of opinion that a moderate entrance examination on the subjects which form the course of study in the first year of an Arts curriculum, would, under suitable precautions, be of beneficial effect; but that at present the matter, which is of much importance and delicacy, should be left for inquiry and consideration by the University Commissioners."

UNIVERSITY HALL.—" The Court concurs with the General Council in opinion, that a common hall for University meetings is desirable, but does not see what steps can be taken at present towards attaining that object."

OPEN TEACHING IN THE UNIVERSITY.—Mr INNES, S.S.C., in a lengthened and able speech, proposed the adoption of the following motion :—" That it is expedient to consider whether the scheme of open teaching in the University by university graduates, under proper regulations and restrictions, might not be introduced into, or extended to, all the Faculties of the Scottish Universities."

This motion was seconded by Sheriff HALLARD, on the understanding that the Chairs were to receive endowments; and was unanimously agreed to.

OPENING OF THE UNIVERSITY LIBRARY TO MEMBERS OF COUNCIL.—Professor SIMPSON moved, " That it be represented to the University Court, that, in the opinion of the General Council, it is expedient that the University Library and Consulting-Room should be thrown open to the members of General Council upon the same terms as they are now open to the Graduates." The last clause of the motion was added on the suggestion of Professor LYON PLAYFAIR, Chairman of the Library Committee.

The motion was seconded by Dr SIBBALD, and agreed to.

Professor CRAWFORD then pronounced the benediction, and the meeting dissolved.

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## ROYAL COLLEGE OF SURGEONS CONVERSAZIONE.

The concluding conversazione for the present season, given under the auspices of the President and Fellows of the Royal College of Surgeons, was held on the evening of Friday, April 5th, in the Surgeons' Hall, Nicolson Street, when a lecture was delivered by Mr Walker, F.R.C.S.E., on the use of the ophthalmoscope in the study of diseases of the eye. Dr Douglas Maclagan, President of the College, occupied the chair; and the company included Professor Simpson, Professor Miller, Dr Omond, Dr Newbigging, Dr J. W. Begbie, Mr B. Bell, Dr Charles Bell, Dr Black, Dr Burn, Dr Cappie, Dr Chalmers, Dr Sibbald, Dr Cleland, Dr Dunlop, Dr Easton, Dr John Struthers, Mr W. Flockhart, Dr Farquharson, Dr Husband, Dr Haldane, Dr Robert Maclagan, Dr MacRitchie, Dr Messer, Dr Handyside, Dr Struthers, Leith; Dr Wallace, Morningside; Dr W. Zeigler, Dr W. R. Sanders, Dr Keiller, Dr Middleton, Dr Robertson, Dr Huie, Surgeon-Major Anderson, Mr Jee, C.B. and V.C., 78th Highlanders; Dr Skipton, 78th Highlanders; Dr Bowen, R.N.; Dr M'Bain, R.N.; Dr Anderson, 13th Light Dragoons; Dr Robertson, Deputy-Inspector General of Hospitals; Mr Traill, Arbroath; Dr Johnston, Montrose; Dr Lawrence, Montrose; Dr Wilson, Glasgow; Dr Kirkwood, Berwick; Dr Paxton, Kilmarnock; Dr Coates, Glasgow; Dr Cadenhead, Aberdeen; Mr Taplin, Madras Army; Dr J. R. Scott, H.M.I.A.; Dr Pitcairn, Bombay Medical Service; Professor M'Donald, St Andrews; Dr Adamson, St Andrews; Dr Archibald, St Andrews; Dr Ballantine, Dalkeith; Dr Bonar, Cupar; Dr Bramwell, Perth; Dr Brown, Saltcoats; Dr Crauford, Peebles; Dr W. S. Gardiner, Lanark; Dr Hill, Stirling; Dr Jeffrey, Ayton; Dr Steele, Wishaw; Dr Stirling, Perth; Mr Troup, Strathmiglo; Mr J. Kello, Biggar; Dr Lucas, Dalkeith; Dr Thin, Penicuik, etc., etc.

The PRESIDENT, in a few introductory observations, expressed the obligations of the College to the numerous country brethren who had responded to their invitations, and the pleasure which it gave him to see gentlemen present from Aberdeen and Perth on the north, the Border on the south, and Kilmarnock on the west. He then briefly referred to the variety and importance of the subjects brought under review at the previous meetings, and introduced Mr Walker as a gentleman whose high qualifications in the department of surgery which he proposed to illustrate were well known to all present.

Mr WALKER, after a few preliminary observations, pointed out that the first idea of an ophthalmoscope seemed to have originated with Mr Cumming, but that the working out of the idea was due to Mr Helmholtz, of Kœnigsberg, who introduced it to the notice of the profession in 1851, from which period all the discoveries made with it date; and that prior to this time the diseases of the deep-seated structures of the eye were involved in the greatest obscurity. He described the instrument of Helmholtz, and explained its theory. The ophthalmoscope which he recommended as the best, however, both on account of its simplicity and ease of manipulation, was the one introduced by Dr Anagnostokis, consisting of a simple concave mirror and bi-convex lens. The manner of using the instrument, and the appearances which are seen with it on the fundus of a healthy eye, were described. The diseases of the retina, optic nerve, and choroid coat, were then noticed, and their appearances illustrated by a series of admirable coloured drawings from the pencil of Dr John Smith. Mr Walker stated that, previous to the discovery of the ophthalmoscope, these diseases, so different from each other, induced by such opposite causes, and of course requiring very opposite modes of treatment, had all been confounded under the general term amaurosis, and had nearly all been subjected to a similar treatment; but that now this was entirely changed, and a more rational treatment adopted, according to the nature and seat of the affection. Mr Walker then entered upon the subject of glaucoma, as an illustration of the value of the ophthalmoscope. He mentioned the different opinions which have been held regarding the nature of the affection by various writers on the subject, and stated that he was inclined to view it as a disease of the globe generally, accompanied with an effusion of fluid into the posterior chamber of the eye, which, by its pressure on the optic nerve, impaired or destroyed its functions. He then showed how glaucoma could be recognised by means of the ophthalmoscope, and described the peculiar appearance which the optic nerve and its vessels present when viewed with this instrument. With regard to treatment, he mentioned that hitherto the disease had been considered almost incurable; but that, in 1857, Gräefe of Berlin proposed that a portion of the iris should be removed for its cure, an operation which Gräefe termed iridectomy, and that this operation in the hands of Gräefe and others had proved more successful than any other plan of treatment. He contrasted this operation with several others proposed since that time; but, on the whole, was inclined to give the preference to iridectomy.

The paper, which was illustrated by numerous diagrams, beautifully executed by a Fellow of the College, was listened to with much interest, and was warmly applauded.

On the motion of Surgeon-Major ANDERSON, seconded by Dr PAXTON, Kilmarnock, the thanks of the meeting were conveyed by the President to Mr Walker for his lucid and interesting lecture. After partaking of tea and coffee, the company separated.

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## ROYAL COLLEGE OF PHYSICIANS, LONDON.

### QUESTIONS FOR THE LICENCE.

### *First Examination.*

### CHEMISTRY, MATERIA MEDICA, AND PRACTICAL PHARMACY.

1. How would you proceed in order to determine the presence of albumen in the urine? State the sources of fallacy connected with each test.

2. Name the principal officinal caustics; explain their chemical action in each case; and give examples of the morbid conditions to which they are respectively adapted.

3. Describe the officinal iodides. State how they are prepared; and mention the impurities which they are liable to contain.

4. Describe the preparations of colchicum. What are the relative strengths of acetum colchici and vinum colchici, supposing the whole of the active principles to be taken up?

5. Enumerate the officinal substances which increase and which diminish the action of the bowels: classifying the former both according to their power and their mode of action.

### *Second Examination.*

### PRINCIPLES AND PRACTICE OF MEDICINE.

1. What are the anatomical characters and symptoms of cirrhosis of the liver? How is its diagnosis to be made?

2. Describe the physical signs and local effects of a sacculated aneurism of the arch of the aorta.

3. Describe the general phenomena of hæmatemesis; its various causes; and give the characters which distinguish it from hæmoptysis.

4. Give the distinguishing characters of scarlet fever, diphtheria, and croup; and describe the treatment of those diseases respectively.

5. Describe the treatment of pneumonia.

6. State the various remedies recommended for the treatment of acute rheumatism and gout; and the doses of each.

### *First Examination.*

### ANATOMY AND PHYSIOLOGY.

1. Describe the medulla oblongata of man. Mention the nerves which take their origin from it, and their presumable functions.

2. Describe the structure of the larger and smaller arteries; and explain how their structure is adapted to their function. What is the true meaning of "arterial action?"

3. Describe the coats of the stomach; their general arrangement and minute structure. What are the characters of the gastric secretion; and what is its probable amount daily?

4. Describe the mechanism of respiration; and the changes it impresses on the air inspired.

5. Define, with reference to the surface of the body, the situation of the heart, aorta, liver, stomach, and spleen.

6. What is the function of the liver?

### *Second Examination.*

#### MIDWIFERY AND THE DISEASES OF WOMEN.

1. Describe the course of the head through the pelvis, in a case of face presentation.

2. Describe the various conditions upon which protracted labour depends, and point out the remedies suitable to each.

3. What are the different indications for the induction of premature labour? What are the different modes of inducing it, and the comparative advantages and disadvantages of each?

4. Describe the principal remedies employed in restraining uterine hæmorrhage; explain their modes of operation, and point out the particular circumstances under which each should be employed.

5. What is retroversion of the uterus? By what circumstances is it produced? and how is it treated?

6. Enumerate the different varieties of uterine polypus, and describe the seat and structure of each, with the symptoms to which they give rise.—*The Lancet.*

## ALLEGED IMMUNITY FROM DANGER OF SULPHURIC ETHER IN ANÆSTHESIA.

*To the Editor of the Edinburgh Medical Journal.*

Boston, *March* 10, 1861.

Dear Sir,—Will you have the kindness to insert the accompanying circular in the *Edinburgh Monthly Medical Journal?*

It explains itself, I believe, and will, I trust, elicit such facts as your readers may possess bearing on the subject of its inquiries.

The question at issue seems as undecided in England (I cannot speak for Scotland) as it is here. Mr Erichsen, in the 2d edition of his *Science and Art of Surgery*, says that "no death has as yet resulted from its (ether) administration." This statement is reiterated in his recent 3d edition, notwithstanding the assertion made by Mr Charles Kidd (*Med. Times and Gaz.*, May 12, 1860), that twenty-five deaths had occurred from ether or amyline.

Dr George Hayward, the first surgeon who performed a capital operation during the entire insensibility of the patient to pain, during a recent visit to Europe instituted inquiries on the point; and, just before his return to America, published an article in the *Brit. and For. Med.-Chir. Review*, wherein he says that he has never known or heard of a well-attested case of death from the inhalation of pure sulphuric ether, though he had taken unwearied pains to obtain information with reference to such an occurrence.

I might also refer to the opinions of the surgeons of Lyons or Naples in behalf of the security of ether, but enough has been said to show the diversity which prevails as to belief in the entire innocuousness of that agent.

The importance of the question must be the excuse for my request made in behalf of the committee which I represent.

Communications may be addressed to the undersigned, chairman of the committee; and the foreign postage, it may be well to say, need not be prepaid.—Very respectfully your obedient servant,

R. M. Hodges.

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(*Circular.*)

Boston, Massachusetts, U. S.

The question of the entire immunity from danger which is claimed for anæsthesia produced by ether being still under discussion, the Boston Society for Medical Improvement has appointed the undersigned a committee "to investigate the alleged deaths from the inhalation of sulphuric ether, and to report thereon."

They would therefore request the medical profession, or any person into whose hands this may fall, to communicate to either of them such cases, coming within their own observation, as shall serve to this end; giving the place, time, and circumstances of their occurrence, with the mode of inhalation adopted, and, especially, information in regard to the following points:—

1st—*The kind of ether used, whether pure sulphuric ether, chloric ether, or ether combined with chloroform.*

2d—*The period after inhalation at which death occurred;*

also any other facts which may enable them to form an opinion on the subject of their investigations.

Richard M. Hodges, M.D.
George Hayward, M.D.
Solomon D. Townsend, M.D.
Charles T. Jackson, M.D.
J. Baxter Upham, M.D.

*February* 1861.

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## VARIETIES.

Appointment.—Dr Sanders has been appointed Physician to the Edinburgh Royal Infirmary, in room of Dr Keiller, who retires by rotation.

Medical Council.—Professor Sharpey, of University College, London, has been nominated by the Crown to the seat at the Medical Council, vacant by the death of Dr Baly.

## PUBLICATIONS RECEIVED.

Alison—The Physical Examination of the Chest in Pulmonary Consumption, and its Intercurrent Diseases. By S. S. Alison, M.D. Edin., etc., etc. London, 1861.

Atlas of Portraits of Diseases of the Skin. Issued by the New Sydenham Society for the Year 1860. London, 1861.

Barclay—A Lecture on Ale, Wine, Spirits, and Tobacco. By John Barclay, M.D., etc., etc. London, 1861.

Beale—On Urine, Urinary Deposits, and Calculi. By Lionel S. Beale, M.B., F.R.S., etc., etc. London, 1861.

Brown-Séquard—Lectures on the Diagnosis and Treatment of the Principal Forms of Paralysis of the Lower Extremities. By C. E. Brown-Séquard, M.D., F.R.S., etc., etc. London, 1860.

Duncan—Report on the Health of Liverpool during the Year 1860. By W. H. Duncan, M.D., etc., etc. Liverpool, 1861.

Franque—Das Delirium Tremens. Von Dr Arnold v. Franque. München, 1859.

Franque—Ueber Hysterische Krampfe und Hysterische Lähmungen. Von Dr Ar. v. Franque. München, 1861.

Guy—Principles of Forensic Medicine. *Second Edition.* By W. A. Guy, M.B. Cantab., etc., etc. London, 1861.

Haughton—The Uses and Abuses of the Turkish Bath. By Edward Haughton, M.D., etc., etc. London, 1861.

Jaccoud—Des Conditions Pathogéniques de L'Albuminurie. Par Sigismond Jaccoud, M.D., etc., etc. Paris, 1860.

Jenner—Diphtheria: its Symptoms and Treatment. By William Jenner, M.D., etc., etc. London, 1861.

Leared—The Causes and Treatment of Imperfect Digestion. By Arthur Leared, M.D. Oxon, etc., etc. London, 1861.

Millar—Hints on Insanity. By John Millar, L.R.C.P. Edin. London, 1861.

Moquin-Tandou—Elements of Medical Zoology. By A. Moquin-Tandou. Translated and Edited by Robert T. Hulme, M.R.C.S.E., F.L.S., etc., etc. London, 1861.

Ogilvie—The Genetic Cycle in Organic Nature. By George Ogilvie, M.D., etc., etc. Aberdeen, 1861.

Smith—Diagnostics of Aural Disease. By J. E. Smith, Esq., M.R.C.S. Eng. London, 1861.

Thomson—Analytical Tables for the Use of Students in Practical Chemistry. By Murray Thomson, M.D., F.C.S. Edinburgh, 1861.

Türck—Méthode Pratique de Laryngoscopie. Par Le Docteur L. Türck. Paris, 1861.

Wilson—The Eastern, or Turkish Bath: its History, Revival in Britain, and Applications to Health. By Erasmus Wilson, F.R.S. London, 1861.

## PERIODICALS RECEIVED.

American Medical Gazette—April. New York, 1861.

American Medical Times—February 16; March 9, 16, 23, and 30; April 6. New York, 1861.

Archiv für die Holländischen Beiträge zur Natur- und Heilkunde. Part 4, Vol. 2. Utrecht, 1860.

Boston Medical and Surgical Journal—March 7, 14, 21, 28. Boston, 1861.

British American Journal—March. Montreal, 1861.

British and Foreign Medico-Chirurgical Review—April. London, 1861.

Bulletin Général de Thérapeutique—Feb. 15; March 15 and 30. Paris, 1861.

Dental Review—April. London, 1861.

Dublin Hospital Gazette—March 15; April 15. Dublin, 1861.

Dublin Medical Press—March 27; April 3, 10, 17. Dublin, 1861.

Gazette des Hôpitaux—March 19, 21, 23, 26, 28, and 30; April 2, 4, 6, 9, 11, 13, 16, 18. Paris, 1861.

Gazette Hebdomadaire de Médecine et de Chirurgie—March 22, 29; April 5, 12, 19. Paris, 1861.

Gazette Medicale D'Orient—March. Constantinople, 1861.

Gazette Médicale de Paris—March 23, 30; April 6, 13, 20. Paris, 1861.

Glasgow Medical Journal—April. Glasgow, 1861.

Journal de Médecine et de Chirurgie Pratiques—April. Paris, 1861.

Journal für Kinderkrankheiten—November and December 1860, and January and February 1861. Erlangen, 1860–1.

Medical Critic and Psychological Journal—April. London, 1861.

Medical and Surgical Reporter—March 2, 9, 16, 23, 30. Philadelphia, 1861.

Nederlandsch Tĳdschrift voor Geneeskunde. Vol. IV. Amsterdam, 1860.

Revue de Thérapeutique Médico-Chirurgicale—April 1, 15. Paris, 1861.

Vierteljahrschrift für die Praktische Heilkunde. Vol. I. for 1861. Prague, 1861.

Würzburger Medicinische Zeitschrift. Part I., Vol. 2. Würzburg, 1861.

# Part First.

## ORIGINAL COMMUNICATIONS.

### ARTICLE I.—*The Scientific Place and Principles of Medical Psychology: An Introductory Address.* By T. LAYCOCK, M.D., Professor of the Practice of Medicine and of Clinical Medicine, and Lecturer on Medical Psychology and Mental Diseases, in the University of Edinburgh.

THIS is the third summer session in which I have delivered a course of lectures on Medical Psychology, combined with practical instruction at an asylum in the management of the insane. For the medical student such a course naturally resolves itself into two divisions,—namely, the principles of medical psychology, and their practical applications to corporeal and mental diseases. But the principles of the science are capable of a general application to human affairs, and, in particular, to the duties of the clerical, legal, and scholastic professions. In the original plan of the course, I had in view the attendance of members of these professions; for I was not without hope that the more energetic and enterprising of them would discover how much the knowledge it includes would tend to their professional success. In this respect I have been disappointed. I shall, therefore, make the present course more purely medical, and open a special class for the non-medical students if such come forward in sufficient numbers.

It must be considered a remarkable circumstance that so little attention is paid in this country to a department of science so generally available. The education of youth can only be considered complete when it secures the full development of all the faculties of the human being, as well as the communication of knowledge. Yet it is conducted, for the most part, either on empirical principles or under the guidance of superficial and mischievous dogmas. I would not, in even the slightest degree, undervalue the worth and labours of the scholastic profession; we see on every side what zeal, high talent, and enterprise is brought to bear on the education of youth. What I object to is this, that its members are not educated more systematically with a view to their calling, by careful training in the physiology and mental hygiene of childhood and youth; and thus that constant correction of errors in detail which science gives to experience is not secured. Now, in truth, a thorough knowledge of medical psychology is as necessary for success in education as for success in the practice of medicine. The capability of directing the attention, strength of memory, docility, and fitness for various branches of knowledge, are primarily dependent upon physiological laws, which the teacher must know thoroughly if he would discriminate in teaching. Even the effects of action and rest of the muscles, and of confinement in a close atmosphere, upon the intellectual powers and moral qualities of children, can only be estimated in a practical way on physiological grounds. So important a matter as the proper supply of air to scholars and teachers while at work (without which there must of necessity be imperfect results), is hardly attended to systematically, from an imperfect knowledge of scientific principles. Our own College class-rooms, as many of you know, are very defective in this respect. But perhaps it is most lamentable to see the overcrowding in preparatory schools for young children, usually held in what are or have been private houses, and in which the air supply is wholly insufficient for even maintaining health at all. If schoolmasters were thoroughly imbued with the simple but fundamental truth, that more oxygen is necessary for the brain in action than in repose, they would never rest until they had secured for themselves and their charge at least as ample a supply of air in the class-rooms, as is thought necessary for the sleeping-rooms of paupers and prisoners. I mention this as a mere illustration of what medical psychology would teach the schoolmaster on one point only for the successful exercise of his profession; but I will venture to say, that, if he had a systematical training in appropriate scientific culture, as we members of the medical profession have, the scholastic profession would occupy the very highest position amongst the learned bodies. In the cases of children or youth with impaired or perverted faculties, from ill health or imperfect cerebral development, the duties of the two professions approximate very closely. How much may depend upon a correct diagnosis on the part of the teacher is proved by many sad instances of suffering and death inflicted on children at school. I need only refer to the case of Thomas Hopley as an illustration of this. That unfortunate schoolmaster never intended the death of the poor imbecile boy committed to his care, but the contrary. It was well known that he was a zealous and energetic sanitary reformer; and, at the time his career was cut short, was full of schemes for improving the hygiene of education. To him, with his pushing temperament, it was a "little knowledge" which was the "dangerous thing." He imagined that a defective intellectual will, manifested by inaptitude for mental effort, was a "powerful" will; he mistook the *vis inertiæ* of cerebral imperfection for the *vis viva* of vigorous action. Locke (he found) had laid down categorically, that "an obstinate disobedience must be mastered with force and blows; for this there is no other remedy." And, accordingly, the sole remedy, according to Locke's dogma, was duly administered, even to death. It is hardly necessary to say that the "remedy" was just as rational in the case of the imbecile youth as the stripes formerly prescribed by Cullen for the cure of insanity. Now a thorough training in the principles of medical psychology would have directed all this energy and zeal in the right channels, and would thus have saved this unfortunate man from the distressing and ruinous results of his superficial dogmatism.

It is not otherwise with the clergy. I lately paid a visit to the Southern Counties Asylum, near Dumfries, and was informed by my friend, Dr Gilchrist, the able superintendent, that there were then five persons under treatment in the institution who had become insane in consequence of the excitement of "revival" meetings, and that others had been received into the Asylum who had been rendered insane from the same cause within the last twelve months. But Dr Gilchrist pointed out to me the important practical fact, that the cases of insanity thus induced came exclusively from certain localities where the clergymen placed no restraint upon the religious excitement which these meetings developed, but rather encouraged it. Similar meetings had been held in other districts without any bad results to the intellect, but in these the clergymen judiciously moderated and controlled the excitement. It cannot be doubted that the clergymen in the first mentioned localities acted in ignorance of mental laws; for it is inconceivable they would knowingly and deliberately encourage proceedings which necessarily lead to one of the most terrible afflictions of humanity. A moderately practical knowledge of medical psychology would have preserved them from these sad results of their ministrations; and they would have secured, like their more judicious brethren, the use of the means without the abuse.

Look next at the administration of justice. The important question of civil and criminal responsibility turns, like discrimination in the education of youth, upon a diagnosis of the mental condition of the individual, founded upon physiological and pathological laws. The skilled physician is the proper person to be intrusted with this important duty; yet such is the present state of the law in Scotland, that if he performs it honestly and well in the case of insane persons for whom restraint is necessary, he incurs the risk of harassing law-suits. So, also, as to the treatment of criminals. Every year thousands are let loose from prison, the authorities being well aware, when doing this, that they will certainly and speedily again commit crime, and be tried, sentenced, and imprisoned, and finally released as before. Justice is wholly helpless to restrain or amend these men; and the evils they inflict on society are borne because they are believed to be inevitable. But that positive mental science which medical psychology develops, would teach the legislator both why these criminals are incorrigible, and how they may be made useful members of society. No great social reform would be easier than the development and application of sound principles to the management of incorrigible criminals of all classes, whether vagabonds, robbers, thieves, or drunkards.

This neglect of mental science and its applications extends, I regret to add, to our own professional culture. No intelligent physician or surgeon really doubts, or can doubt, the value of medical psychology in the treatment of diseases generally, as well as in its special applications to mental disorders. Yet neither the Medical Council of the empire, nor any of the national examining boards, require a knowledge of the subject as a part of the professional curriculum. The medical student is expected to know the nature of plants and animals; but the highest knowledge—a practical knowledge of human nature—is not required.

Doubtless one reason of this neglect of so important a branch of modern knowledge is, that psychology, considered as a practical science, has but lately been developed in this country in its applications, while speculative psychology was found almost useless. Perhaps the neglect is partly due to a misconception of what medical psychology as a science consists. It is generally thought, even by persons otherwise well-informed, to be identical with that department of the practice of medicine which treats of the cause, nature, and treatment of insanity; and that it has no wider application to the practice of medicine, or human affairs in general. On the other hand, the layman, entertaining very similar ideas, thinks the subject is of no interest or importance beyond purely professional circles. The main cause, however, is the well-known fact that public bodies rarely lead public opinion, but are led by it; otherwise our educational boards, convinced as their individual members must be of the practical importance of medical psychology, would, long ago, have diligently fostered it, for this could have been effectually done simply by making it a part of the professional curriculum.

I venture, however, to express the opinion, that many years will not elapse before medical psychology, or (what is the same thing) a practical mental science, will be as much cultivated as chemistry. For it is, in truth, nothing more than the chemistry of human nature; and as such, when rightly understood, will be made a subject of study by every intelligent man. In the meanwhile, however, it will be well to endeavour to hasten the progress of the science, and therewith all those beneficial applications of which it is capable. We will, therefore, inquire into the place which psychology occupies amongst the sciences in relation with medicine, so that we may be able to have a definite idea of the fundamental principles, the objects, and the methods of medical psychology, in so far at least as it is taught in this course.

The place of psychology amongst the sciences auxiliary to medicine is fixed by a general principle long recognised, namely, that a science is in intimate relation with medical science and art in proportion as it is available to the uses of the physician. Now, the physician applies the sciences generally with two distinct objects,—namely, first, to advance his art by rendering them subservient to practical ends, such as pathology, therapeutics, dietetics, and hygiene; and, secondly, to develop the great science of life itself (termed biology), because it is upon this that medicine itself as a science rests. Botany and zoology purely are subservient to biology, or the science of life, as subordinate branches of it, and through it to the science of medicine; but *medical* botany and *medical* zoology describe the plants and animals, or parts of them, which cause or cure disease. They thus only advance the art of medicine. The question, therefore, as applied to psychology, is simply this: What are the relations of psychology to medicine, considered from this twofold point of view? or, in other words, how far does psychology serve to develop the great science of life (or biology), and how far is it applicable to the practice of medicine in its various branches of pathology, therapeutics, dietetics, and hygiene?

A very short consideration of these questions will serve to show that psychology, as compared with the other natural sciences, stands in a wholly exceptionable position in relation to medicine, whether studied as a science or an art; and this because it is hardly to be classed with the natural sciences at all. In the largest meaning of the term, psychology is cultivated according to two distinct methods, namely, the metaphysical and the physiological. Now, the metaphysical psychologists (by far the most numerous) investigate the laws of consciousness and thought wholly apart from the laws of life; and for the express reason, either that the soul, while active on earth, is or may be independent of the living body; or else—admitting the necessary connection between life and consciousness—because that connection is wholly mysterious and inscrutable. Thus it happens that, by both classes of metaphysical psychologists, psychology is severed from biology or physiology; logically by the one, of necessity by the other. The one class positively forbids the union, as contrary to first principles; the other virtually forbids the union, as contrary to possibilities. Hence medicine, as founded on the great science of life, derives no help, directly at least, from metaphysical psychology; it can only use so much of the knowledge of the laws of thought and consciousness in the abstract as metaphysics has attained to.

Physiological psychology is only of recent origin, and has arisen concurrently with the advances made in neurology. It has been cultivated in two modes,—namely, as a department of the science of life, and as a system of philosophy. Of late years, eminent physicians and surgeons (as Sir H. Holland, Sir B. Brodie, Dr Carpenter, and others) have cultivated psychology from a physiological starting-point. These, however, have not developed a system, but have rather leaned to speculative psychology as the basis of their researches. The school of phrenological psychology is also of this class, but it claims to be systematic. Under Gall and Spurzheim it sprung, like the other sciences of life, out of medicine; and, if it had remained in connection with medicine, might have attained an equally high position as any of them. But, unfortunately for its progress, it was too quickly severed from the medical sciences, and constituted into a distinct and popular art, as cranioscopy. The practice of it then fell into the hands of persons either, for the most part, devoid of physiological training, or else who had a stronger bias towards philosophy than biology. In this way it became either wholly unscientific, or took an ethical and philosophical development; and its progress, consequently, as one of the biological sciences, was checked. It is for this reason that phrenology has hardly made any progress as a science since the days of its founders; and not to advance is to recede.

The philosophical school of physiological psychologists is variously constituted, but may be divided into two divisions, the German and British. The German is highly speculative, and is perhaps best represented by Oken; the British school offers less of the speculative, and more of the practical element. As examples, I would name my friend, Dr Morrell, Professor Bain, and Mr Herbert Spencer. The latter is now engaged upon a most elaborate system of philosophy, which will include principles of a physiological psychology, not differing, according to the programme, very widely from those developed in my Text-book, published last year. It would have been better, perhaps, if this school of physiological psychologists had adopted more decidedly the fundamental principles of the phrenological; but it has manifested so distinct a leaning to the metaphysical or speculative method, that it remains yet to be seen how far it will develop the physiological side of psychology so as to bring it within the group of the biological sciences available to medicine. And it is to be specially noted, that, while there is this uncertainty as to the biological basis of the school, the principles which have been developed have not as yet been shown capable of special applications to medical science and art, such as those of which the principles of phrenology are capable; and I here wish to distinguish phrenology from cranioscopy. To this end psychology must take up, I venture to say, a more decided position in the group of biological sciences.

Be all this as it may, however (for the subject admits of great difference of opinion, and I offer these considerations suggestively only), I will venture to affirm the practical conclusion, that psychology in general, of whatever school, is not as yet in the same position in regard to medicine as the other sciences, whether we consider it as one of the sciences of life, or as to its practical applications to pathology, therapeutics, dietetics, and hygiene. And it necessarily follows that the position of medical psychology must be in accordance.

Looking at the position of psychology proper, it is clear that medical psychology must take an independent place between biology on the one hand, and metaphysics on the other. It cannot ignore the vast labours of the metaphysicians; it must, of necessity, take in all that biology has accomplished. Hence its method must be eclectic, to the end that every solid result of every kind of inquiry may be made available to its scientific and practical development. It must virtually be a science of mind developed as a science of life.

Or, briefly, medical psychology must be cultivated independently as a positive and practical science, and not as a mere offset from speculative, metaphysical, or philosophical systems of psychology. For it is this positive and practical element alone which will secure not only a solid foundation, but also the best materials for the superstructure of a science of mind, since it demands definiteness and clearness as to principles and facts. Such an element, medicine, whether considered as a science or an art, affords; and hence it is that she has been the fruitful mother and nurse of almost all the natural sciences, as I trust she will yet be of psychology.

These preliminary considerations and conclusions enable us to mark out some, at least, of the objects and fundamental principles of a science of medical psychology as thus defined. In the first place, its object is living man; that is, as he exists on earth, and not as a disembodied soul, or as thinking, feeling, and willing, independently of his organization. It absolutely excludes, therefore, both a speculative ontology and a mystic spiritualism. Medicine, being founded on the science of life, deals exclusively with the laws of life; consequently, medical psychology, as I propose to teach it, examines mental states exclusively in correlation with the vital states with which they are necessarily coincident in the living man, and without which they cannot take place. If we enter at all upon speculative questions, it is solely to get a starting-point for observation and induction; and this is required in all the natural sciences.

2. Its object is man in all states of consciousness whatever, and not restrictedly to those in which he acts as a rational or intellectual being. As practically considering human happiness and human suffering, it includes therefore all corporeal as well as all mental conditions in reference to these. And to this end it holds the fundamental principle that consciousness is one, whatever the conscious state of the man may be, or however caused. Pain or pleasure, of every kind, consists only in different modifications of the same consciousness; and its excitation or relief, therefore, whether it be mental or corporeal, depends on a knowledge of the same general laws.

3. Medical psychology affirms the fundamental principle of physiology, that no change whatever arises in the consciousness without a corresponding change, or series of changes, of some kind in the organism. And the practical conclusion necessarily flows from this principle, that to determine what changes in the organization coincide with changes in the consciousness must be its fundamental object, without

which no truly practical science of mind is possible, but only speculative systems. In this particular medical psychology differs wholly from speculative psychology (which expressly excludes this inquiry), and follows therein its own independent course; for it teaches that, devoid of this knowledge, we can never attain to a science of consciousness at all,—that is, to a knowledge of the order of vital events, in virtue of which those changes in the consciousness known as pleasure, pain, desire, aversion, perception, thought, impulse, passion, will, and the like, arise, are intensified, are disordered, or cease. Neither, devoid of this fundamental basis, can we have any sufficient theory of neuralgia or melancholia, of delirium or of insanity, or of the influence of climate, diet, regimen, and drugs on the mental powers; nor can we establish otherwise a scientific basis for mental hygiene and mental training, or education. In short, without a knowledge of the mutual relations of vital and mental changes, no practical mental science is possible, and therefore no true medical psychology.

4. While we affirm as a fundamental principle, that changes in the organization necessarily coincide with mental changes, we are not materialistic; on the contrary, we postulate force as the first cause of these changes. It is not matter, but the forces of matter as manifested in living things, upon which these changes immediately depend. This general principle only affirms a recognised general law of creation. Unless the forces of matter were ever operative in inducing change, the phenomena of creation would cease. Ceaseless change within the limits of its laws is the order of creation. When the changes cease which constitute the phenomena of life, it is death. But still this is only a change in the mode of being; and if medical psychology do not follow the inquiry further, it is because it recognises the impossibility of any scientific inquiry being instituted in that direction. The order of phenomena beyond the grave are matters of faith, and not of science or observation.

5. The unity of the phenomena of life and consciousness in man implies a unity of forces and laws. Hence the laws of the mental and vital forces should correlate each other. Now, the highest development of consciousness is the reason, or a knowing direction of all the powers to the attainment of desired or desirable ends; consequently, the laws of reason itself must be correlative with the laws of life and organization. But the converse of this proposition is also true, so that the principles of biology must correlate the principles of mental science.

I wish to dwell upon this fundamental principle very emphatically; because I think, so long as physiologists hold vital forces and laws to be wholly distinct and independent of mental forces and laws, both biology and psychology will make but slow progress; and I think I shall be able to prove to you how simple are the general laws common to the two classes of phenomena, and how capable they are of application to an infinite variety of changes in both health and disease, and whether of the body or of the mind. But, to attain this clear view of the general principles of mind, we must take a wide sweep of the horizon of life. I shall not, however, lead you through a trackless desert to this higher stand-point. I shall endeavour to apply to psychology the sure and comprehensive method which has been found so available in life and organization. According to this method, we investigate from below upwards; thus passing from the most generalized and most homogeneous organisms to the most evolved and most heterogeneous, and tracing the evolution of structure and function from below upwards, till we concentrate all our knowledge on the study of man. Palæontology shows that thus organisms have been developed on this earth; philosophical zoology shows that thus they exist; comparative anatomy and embryology show that thus each individual is developed. Nothing is more certain than its results as applied to these departments of biology. This method, therefore, so successful in its application to the other sciences of life, so natural and, I may add, so logical, we will apply to medical psychology. We will trace, from below upwards, the evolution of the instincts, passions, emotions, sentiments, intellectual powers of man, as we would trace the evolution of the nervous system or of the organism. We will commence with the simplest forms of life, and show what community there is between the instincts of the zoid and of humanity, and what relation between modes of vital action and mental action; drawing our illustrations mainly from pathology. In this way we shall attain to a knowledge of the law of psychological development and mental differentation, just as the biologist attains to a knowledge of the laws of corporeal development and physiological differentation, while at the same time we apply them. In short, we shall bring man into unity with other created things, and thus avoid a multitude of obstacles to a knowledge of human nature, which prejudices, preconceived notions, and hypotheses founded upon the narrow basis of a restricted metaphysics, raise up on all sides.

We shall not forget, however, that we have to deal with degeneracy and disease, and shall therefore endeavour to develop the principles of a psychological pathology out of our psychological biology. In attempting this, we shall have to reverse our method, and inquire by what laws retrocession takes place from the higher to the lower forms and modes of life, and organization, and consciousness. This is a branch of science little cultivated as yet; but I hope to be able to show you that the principles of mental pathology are as easily comprehended as those of biology or psychology, when the phenomena we investigate are examined by the light of great general laws.

I will now, in conclusion, direct your attention to one or two primary correlations of biological and psychological laws, as illustrations of the principles we shall develop and apply. You are aware that the fundamental or primary element of consciousness is the feeling of being one, or an individual—the "Ego" of the metaphysicians. It is this one, this "I," this individual, that is the subject of all the various changes in the consciousness; *I* feel, desire, think, reason, etc., etc. But it is only as a living man—an organized being. Now, what is the corresponding or correlative vital or biological law—equally primary and fundamental, and equally inclusive? It is the same law of unity, in virtue of which all the multitudinous elements of the body and all the different organs are developed in such fitting relation to each other, that they not only constitute one thing—*i.e.*, an organism—but so combine in function and duty, however diverse, that the one identical thing continues to exist in time and space, until the object of its existence is attained, whatever that may be. This law of union of many parts into a harmonious whole is, in fact, not only the law of all life, but of all creation—of the universe—the One absolute, which includes all created things whatever. The results of the law are manifested in the consciousness, as the idea, notion, or feeling of being one.

This law of unity is to medical psychology what the axiom—the whole is equal to the sum of all its parts—is to geometry. The simple law, that unity of consciousness correlates unity of organization, is an essentially fundamental principle. I shall not dwell upon it now, because you have access to abundant illustrations and applications of it in my Text-book, Part iv., chap. 9.

The second law is that of *self-consciousness*, in virtue of which the individual not only feels as one, but also as being not another. He divides the things that come under his cognizance into the "me" and "not me," to use the phrases of the metaphysician. This is the vital law of duality and dichotomy. Developed by the metaphysician, it reappears as the law of "relativity;" it is the foundation of the "dualistic" theories of metaphysics, and is applied in a great variety of modes by speculative philosophers and physicists, to hypotheses and theories. Without the dual relation of things there could be no change, no phenomena, no life, no thought. Hence it is that we put soul in relation with body, force with matter, the Creator with creation, in all our inquiries; for out of relation to each other there can be no satisfying inquiry into these things.

But let us inquire,—To what fundamental biological law can we refer pain, and pleasure, and desire? We discover, when observing the functional activity of living organs, that if their machinery works perfectly, there is no pain experienced; but usually, on the contrary, a sense of pleasurable enjoyment of life. But if their functions be disordered, then suffering and disease arise. Now, it is for the exercise of these functions that, according to physiology, they are constructed, and undergo never-ceasing change; or, in other words, that they are formed and act for certain ends. We, therefore, formularize the results of our experience and observation, and say that pleasure arises when the results of the operation of the vital forces accord with the ends aimed at; pain is felt when the results are imperfectly attained, or not attained at all.

Now, desire is felt when the man seeks after these ends; or, in other words, is that state of consciousness which accompanies the effort of the organism, as a whole, to attain to the ends for which it is constructed, in whole or in part. The state of consciousness which coincides with the effort or act of energy, is what Sir W. Hamilton terms a "conation;" it is what is known commonly as an act of will. But the "conation" may be without a knowledge of the ends or of the means for its attainment, in which case it is instinct; or there may be full knowledge of both, when it is reason. Between the two extremes there is every conceivable degree of knowledge and desire. But these fundamental doctrines as to the correlation of the laws of life and mind imply that ends are aimed at and attained in creation; and that the forces of matter act according to laws, the results of which are the ends thus aimed at and attained. Or, in other words, without affirming an absolute doctrine, we lay it down as an induction, drawn from observation and experience, that design, and therefore a designing force, guides the vital forces, as subordinate things, to the attainment of certain ends. This is the fundamental doctrine of teleology. I cannot understand how any biologist can deny the principle; but it is denied by men who look upon the doctrine of ends as little better than a superstition, or, at the very least, as a doubtful hypothesis. Every physician knows, I think, that the uses of organs is the main question in anatomy and physiology; and that, if their uses be not known, their pathology and therapeutics are defective. I need only refer to the spleen and suprarenal capsules as illustrations. We are still in doubt as to the functions or uses of these viscera, and are therefore equally in doubt as to their diseases. And this would be a sufficient reply to the anti-teleologists. But I must add also, that unity of science is impossible if a law of design be not admitted; for I apprehend none will deny that every rational being designs, and plans, and arranges, before he acts as an organized being. Now, the *law* of design in vital energies correlates the *consciousness* of design in mental energies. Just as we feel we are one, and energize or act as one, in accordance with the vital law of unity, so we feel we act to ends as rational beings, in accordance with the vital law of design. If we separate, in observation and inquiry, the laws of consciousness from the laws of life, when thus inseparably united in fact, we not only fall into an error of method, but render impossible that unity of all the sciences which is now believed to be the final and fitting result of all human knowledge.

These general doctrines will suffice as examples of the fundamental principles which we shall have to develop and apply to mental diseases especially, and to the practice of medicine generally. The opportunities we shall have for practical observation of the insane at a large asylum, will enable you to test their capability of application to the former; while in the wards of the Infirmary you will have cases under daily notice, which will enable you in like manner to apply the principles at the bedside of the sick; and at the close of the session I shall invite you to examinations, which will test your knowledge both of the principles and the practice of medical psychology, in especial relation, however, to mental diseases.

## ARTICLE II.—*Case of Pulsating Tumour in the Orbit, under the care of Professor Syme, cured by Ligature of the Common Carotid Artery; with Remarks.* By JOSEPH BELL, M.D., L.R.C.S., late Resident Surgeon, Clinical Wards, Edinburgh Royal Infirmary.

(*Read as a Communication to the Royal Medical Society of Edinburgh, Session* 1860-61.)

CASE.—M. B., æt. 22, admitted to the Royal Infirmary, June 1860.

**History.** Until about eight months before her admission, the patient enjoyed excellent health. In October 1859, she noticed a slight protrusion of the left eye, and mentioned it to her relations, who, however, did not observe it.

Towards the end of December she was married. In the end of January she had a severe attack of urinary irritation, accompanied by pain during and after micturition; she was also obstinately constipated, and her whole digestive system was disordered. One morning, soon after the urinary symptoms had shown themselves, she was attacked by a sudden and very severe pain in the right temple, which lasted for about two hours, and was followed by—or rather ended in—a "sort of faint." This seems to have been a state of partial unconsciousness, followed by relief from the pain. She was then ordered by her physician to rub the temple with a mixture of chloroform and laudanum; during the rubbing she states that she felt a crack, as if something had given way inside. (I may here notice that this "crack" is a valuable symptom, being present in several of the other cases of this disease.) On recovering from the faint, the pain was gone. Next morning the pain returned at about the same hour, and lasted for a similar time. Exactly a week after the first occurrence of the morning pain, she noticed, on awaking, that she had *double vision*, and that the eye was protruded. This protrusion was now evident to others. She was ordered to poultice the eye, under the impression that there might be a deep-seated orbital abscess; no result followed the poultices. Two days after the occurrence of the double vision, and ten days after the first pain in the temple, the pain returned with great intensity, followed, in about an hour, by the sudden commencement of the extraordinary noise in the head, which has continued ever since. Some weeks after this, the conjunctiva of the lower lid became everted, and protruded, forming a prominent red mass below the eyeball. This was scarified on various occasions without result. She was twice put under the influence of mercury, and salivated without effect. For the two or three months before admission, nothing had been done, except cold applications to the tumour, and attention to her general health.

**State on admission.**

Patient is delicate-looking and ex-sanguine, has an anxious care-worn expression, and has lately fallen off considerably in flesh and strength. Her right eyeball is excessively prominent, as if it would burst from the confinement of the swollen lids. The conjunctiva is injected, tense, and œdematous. The lids are swollen, the lower lid being everted and its conjunctiva protruded. There is a distinct pulsation behind the upper lid, between the eye and the roof of the orbit, in a soft tumour, which apparently contains fluid, but which feels not so much like an aneurismal sac as a bundle of small vessels. It is compressible, and can be greatly diminished in size, though not completely emptied. The pulsation is almost synchronous with the radial pulse, and is accompanied by a sensible and audible thrill. The pulsation is very distinct at the orbital margin; the anterior edge of the roof of the orbit being, in part at least, absorbed. On applying the ear to any part of the head, especially on the right side, a most remarkable whirring noise is heard, resembling that of a loud though distant engine, the sound of which is slightly muffled. This is very audible to the patient herself, and gives her great annoyance. It can be heard by a bystander at the distance of a yard. The pulsation in the tumour is increasing. The patient suffers more through the night than during the day, and can never enjoy sound sleep, as the pulsation and noise constantly awake her with a start. Pressure on the common carotid of the affected side almost stops the pulsation, and renders the bruit barely audible. Sudden removal of the pressure is followed by most intense pain in the head, and a sensation as if it were about to burst, while slow and gradual removal causes no pain.

**Operation.**

Mr Syme, on the 3d of July, tied the right common carotid artery immediately above the omo-hyoid muscle. On the ligature being tightened, the prominent tumour visibly decreased in size, pulsation in it ceased, and the protruding red conjunctiva became rapidly blanched. As the protrusion of the conjunctiva was too large to be returned, Mr Syme, with a pair of curved scissors, cut away a longitudinal stripe of it, while the patient was still under chloroform; the wound in the neck was stitched up and patient sent to bed.

*In the evening.* Patient is quite comfortable. The noise in her head, previously so annoying, has now completely ceased, as also the pain in the right side. She feels, however, a fulness and distension of the vessels of the left side, especially in the anterior temporal artery. She expresses great delight at the cessation of the noise.

*July* 7. Patient has gone on well. To-day the protrusion is evidently and decidedly less than before. The eye is gradually receding.

*July* 8. To-day, as the conjunctival protrusion still continues, Mr Syme cut off another longitudinal slip with the curved scissors.

*July* 9. The eye still continues to recede. The lower eyelid, from the contraction of the conjunctival wound, has resumed its proper position. She can now open and shut the eye, and double vision has completely disappeared.

The patient recovered without a single bad symptom, the ligature came away on the fourteenth day after the operation, and in a week or two more the patient went home, with scarcely a trace of her previous deformity.

This case is one of great interest. A young woman, previously healthy, is suddenly seized with pain in the head, followed by an equally sudden snap, or crack, inside; resulting from no injury, but causing great deformity. A noise in her head, audible to herself and others, loud and persistent, renders her life miserable by its weary sameness, and the confusion of ideas which it creates. The tumour is rapidly increasing; vision, first rendered double, begins to fail entirely; the walls of the orbit are absorbed, and the patient's health rapidly undermined. Palliatives are of no use. Medical aid has failed. The carotid is tied; a perfect cure results;—truly a triumph of surgery.

So far as regards the treatment of this very rare malady, there is now, from the good results of the several recorded cases, very little left to desire. But as to its pathology, there is much room for doubt and difference. Even the name is not yet settled. "Pulsating tumour in the orbit," this tells no more than what is seen at the first glance when a case presents itself. "Aneurism of the orbit," "aneurism by anastomosis of the orbit," show how authorities vary as to its nature.

Light may be thrown on the pathology,—1. From the symptoms and results of treatment in previously recorded cases. 2. From accounts of the *post-mortem* appearances in the fatal ones.

1. *Previous Cases.*—These are rare. Out of a list of about 20 pulsating tumours of the orbit (11 of which are referred to by Mr Nunneley of Leeds in a very elaborate paper on a similar case),[1] only 5 resemble in every particular the present very remarkable case. These five are put on record by Mr Travers of London,[2] Mr Dalrymple of Norwich,[3] M. Jobert of Paris,[4] and Mr Nunneley of Leeds,[1] the latter giving two cases.

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[1] *Med.-Chir. Trans. of London*, vol. xlii.

[2] *Med.-Chir. Trans. of London*, vol. ii.

[3] *Med.-Chir. Trans. of London*, vol. vi.

[4] *Mémoires de l'Acad. Roy. de Médecine*, vol. ix.

In very minute particulars these six cases correspond. Their principal characteristics are the following:—The ages of the six varied from 22 to 65 years, but in all the health was impaired or weakened previous to the attack. Three of the five females were pregnant when the disease commenced, of the others one was in delicate health, and the last was well advanced in years. M. Jobert's case was a bronchitic gentleman, 60 years old. In every one of the six cases, the suddenness of the pain was most remarkable, and in four of them, a loud noise, like the discharge of a gun, or the crack of a whip, was most distinctly heard and described by the patients, "as if something (to use the words of one) had given way inside of the head with a sudden snap;" and in all the cases this occurred spontaneously, without any blow, fall, or great exertion. This is a very remarkable symptom, and distinguishes these six cases from another set, which resemble them in many other respects. In all these six cases the eyeball was protruded, and there was a pulsation communicated to it. In all six there was a well-marked bruit, described differently as, "bellows-murmur," "rippling," "buzzing," and "muffled engine-stroke." In all the pain was intense; in all the vision was impaired,—in two partially, in four completely gone in the affected eye. In every case the eyelids were puffed and œdematous, and the conjunctival vessels injected. This is an important symptom, as tending to prove the existence of some obstacle to the venous return. In all six cases the common carotid was ligatured on the affected side; and the operation was followed in five cases by a complete cure of the disease, and in the other by remarkable head symptoms, secondary hæmorrhage, and death, though the immediate effect of the ligature in it also was to relieve the symptoms. The morbid appearances in the fatal case will be noticed hereafter.

The cases of Travers and Dalrymple were called by their authors, "Cases of Aneurism by Anastomosis of the Orbit," and as such they have been quoted by all succeeding writers on the same subject, till Mr Busk in the 22d, and Mr Nunneley in the 42d volumes of the *Medico-Chirurgical Transactions of London*, disputed the accuracy of this pathology, and substituted the name of "Aneurism in the Orbit," and "Aneurism of the Orbit," respectively. M. Jobert's case is called an aneurismal tumour, and is said to have had the "susurrus" heard in varicose aneurisms; but of the existence of a varicose aneurism there is no evidence, nor from the result is there the slightest probability.

Another series of cases of pulsating tumour in the orbit, while resembling each other very closely, differ in several important particulars from the first series. These are reported by Messrs Busk, Scott, Curling, Velpeau, and Nunneley. These all occurred in males of middle age; and in the history of each, its origin was traced to some distinct and severe injury—either a blow or a fall,—thus differing from the first six, which were all of spontaneous origin.

Notwithstanding their traumatic origin, it is very remarkable that, in all but one of this second series, the swelling and pulsation increased very gradually; and that no exact date could be given by the patient as to the first commencement of either the pain or swelling. In Mr Curling's case,[1] the patient, from a fall, suffered from concussion of the brain, followed by deafness and paralysis of the face on the right side. Two months after the accident, the right eyeball became slowly and gradually protruded, with pulsation and bruit. The right common carotid was tied, and nine days after the operation, the eyeball had resumed its proper place. Mr Curling calls this case "Traumatic Aneurism of the Ophthalmic Artery," though, in all physical respects, the pulsation, bruit, and protrusion, resembled the cases of Travers and Dalrymple.

In Mr Busk's case[2] there was also concussion, protrusion of left eye, with paralysis of left side of face. Seven months after the accident, a distinct pulsation of the protruded globe was observed for the first time; on examination, a firm pulsating tumour, about half an inch in diameter, was felt on the upper and inner part of the orbit. A thrill and whizzing in the tumour accompanied the pulsation, together with constant and strange noises in the head. The carotid was tied, the pulsation ceased, and eventually the tumour also disappeared.

Mr Busk, in his remarks, states that he regards this case, as also those of Travers and Dalrymple, not as aneurisms by anastomosis, but aneurisms within the orbit, for three reasons—1. Their sudden accession with pain; 2. Their rapid increase; 3. The powerful pulsation even when recent and small, with the strong aneurismal whizzing sound.

In M. Velpeau's[3] case, the patient, after a severe blow on the neck from a plank, was attacked by pain in the right side of the head, and pulsation in the right orbit. The eye was protruded, and the sight impaired. The pulsation was accompanied by a "bruit de forge," heard especially in the right orbit. The right common carotid was tied with temporary success; but three months afterwards the pulsation and bruit returned.

Mr Nunneley's[4] patient received a blow on the eye. Some weeks afterwards the eye began to protrude, and the conjunctivæ became œdematous; and three months after the injury, pulsation was evident in the orbit, and he felt a constant beating noise in the head. The carotid was tied without chloroform, and immediately on the tightening of the ligature, he felt the pain and noise in the head disappear.

Mr Scott's patient fell into the hold of a ship, suffered concussion of the brain, and immediate protrusion and pulsation of one eyeball,

[1] *Med.-Chir. Trans. of London*, vol. xxxvii., p. 221.
[2] *Med.-Chir. Trans. of London*, vol. xxii., p. 124.
[3] French translation of *Mackenzie on the Eye*. Paris, 1844.
[4] *Op. cit.*

with, soon after it, a gush of arterial hæmorrhage from the nose, to arrest which Mr Scott tied the carotid. The pulsation ceased at once, and the protrusion rapidly diminished after the operation. This was evidently a rupture of an artery within the orbit and outside of the cranium, there being no signs of cerebral compression.

The above eleven cases of this disease are the most illustrative of its nature. Several others might be given, reported by Walton,[1] Wardrop,[2] Van Buren and Mott,[3] Dupuytren,[4] Schmidt,[5] and others; but none of them throw more light on the pathology than is given by those already quoted.

2. *Post-mortem Appearances.*—The information gained from examination of cases of this disease after death, is, to the credit of surgery, very scanty; as the most favourable results have followed nearly every case in which the carotid has been tied for its cure. In the only fatal cases which I have been able to discover (one under the care of Mr Nunneley, the other of Mr Bowman), unfortunately for pathology, very little was found. In Mr Nunneley's case,[6] the symptoms were particulary well marked. Sudden crack, as of a gun, when the patient was stooping; great pain and buzzing in the head; protruded eyeball and swollen lids; sight gone; distinct bruit, and decided pulsation. The artery was tied, with immediate cessation of the symptoms. The patient died sixteen days after the operation, and the following was found:—"The ophthalmic artery was considerably dilated; its coats thickened with atheromatous patches; two of its branches, particularly the inner, or the continuation of the trunk toward the inner angle of the orbit, were distended and filled with coagulum; the outer, or lachrymal branch, was also large, and filled with coagulated blood, but not to the same extent as the inner. Before the operation, the bruit and pulse were most decided on the inner side. All the other branches, arteries, and veins were so small as hardly to be observed." No sign there of aneurism by anastomosis; and the dilated arteries with atheromatous patches, in an old woman (æt. 65), were very much what might have been expected, even had there been no pulsation in the orbit. Outside the orbit, however, the following was found, the importance of which seems to have been underrated:—"The left carotid, on emerging from the bony canal at the origin of the ophthalmic artery, was decidedly enlarged, and filled with, and surrounded by, a nodule of coagulum about the size of a large horse bean; the right carotid was normal."

In Mr Bowman's[7] fatal case (not, however, reported by Mr Bowman), which seems to have been a well-marked one, and the symptoms of which were at once removed by the ligature, the report of the pathology is very shortly given. "At the autopsy no aneurism was found to explain the symptoms present during life."

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[1] *Walton's Operative Ophthalmic Surgery*, p. 258.
[2] *Lancet*, vol. xii., p. 267.
[3] *New York Journal of Medical Science*. 1857.
[4] *Revue Medicale*, vol. iv., p. 400.
[5] *Ammon's Zeitschrift für die Ophthalmologie*, vol. i., p. 263.
[6] *Op. cit.*
[7] *Lancet*, August 11, 1860.

It is indeed very remarkable, that in these two cases in which the symptoms were well marked, the operation performed so far with success, and examinations obtained, really nothing to account for the symptoms was discovered in the orbit. Where, then, are we to look for the cause? In default of a better explanation, and with the greatest possible deference to the recorded opinions of such able observers as Travers, Dalrymple, and Nunneley, I am inclined to think that the aneurismal condition of the internal carotid, so well described by the latter surgeon, is a fact of the very greatest importance, and may, in part at least, account for the symptoms—I do not say in all cases of pulsating tumours of the orbit, but in some of them, especially in such a one as Mr Nunneley's, where really nothing else was found. In it we have extensive protrusion and pulsation to account for; yet all we find within the orbit is a slightly dilated condition of a small arterial branch, while the other arteries and veins are hardly visible. And it must be remembered that, as the fatal termination occurred on the sixteenth day after the operation, in that period there was no time for any previously existing aneurismal tumour to disappear. Might not the condition of the internal carotid account for the symptoms? The coagulum, large as a horse bean, must have occupied space which was formerly completely filled; the bony walls of the cranium cannot yield; the coagulum and dilated artery must find room,—at the expense of what parts? The vessels which are close by must be compressed, especially the ophthalmic vein; for the artery is more protected in its foramen, than the vein in the sphenoidal fissure. The compressed vein prevents return of the blood from the orbit, accounting for the venous congestion and injection specially noticed in every case. This, too, explains, as the theory of aueurism by anastomosis can never do, the suddenness of the pain, and the rapidity of the protrusion. In a case[1] reported by Sir Gilbert Blane, too long to quote here, dilatations of the internal carotids, much smaller than the one in Nunneley's case, produced the most violent symptoms—acute pain, noise, and blindness. In another,[2] by Professor Dudley, the diagnosis was an endocranial aneurism, while the symptoms of pulsation and protrusion in the orbit closely resembled the present case, the carotid was tied with success. What is the cause of the disease? *Aneurism by anastomosis* must be rejected on these grounds:—1. It never could account for the suddenness of the symptoms, which is so remarkable a feature of nearly all the cases.

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[1] "History of Cases of Disease of the Brain," in *Transactions of Society for Improvement of Medical and Surgical Knowledge*, vii., 1860.

[2] *American Journal of Medical Science*, January 1843. Quoted by Mackenzie, *op. cit.*

2. Aneurism by anastomosis is *not* curable by ligature of vessels. This was most clearly insisted upon by Mr John Bell, the author of the first good description of aneurism by anastomosis, and has been verified by numberless instances. 3. In the cases of pulsating tumour examined after death, no aneurism by anastomosis was found.

*Aneurism, true or false, in the Orbit.*—This may certainly be considered as the cause in some of the cases,—as in Mr Scott's traumatic case, where there was evidently either a false aneurism or a rupture of an artery in the orbit; or Mr Busk's case, where the small aneurism could be felt. Aneurisms in the orbit, though rare, are to be found in the records of pathology. Mr Guthrie[1] records one in which there was protrusion of both eyes, with a hissing noise in the head, and in which aneurisms of both ophthalmic arteries, as large as nuts, were found on dissection. Mackenzie also quotes two cases of aneurism of the arteria centralis retinæ—one with pulsation in the orbit, besides loss of sight.

*Obstruction to venous return in sphenoidal fissure, by endocranial aneurism, or other tumour,* may be allowed as a cause, at least, in the cases where no true aneurism could be found on dissection, and especially in those cases occurring after blows on the head, and in connection with other head-symptoms denoting internal mischief.

## ARTICLE III.—*The Diseases and Causes of Death amongst the Poor of the Parish of St Mary-le-bone, from* 1839 *to* 1847. By ROBERT BOYD, M.D., Physician to the County Somerset Asylum; formerly Resident Physician, Mary-le-bone Infirmary.

(*Continued from page* 519, *Vol. III.*)

THE following observations have reference to, and are based on, the results of two thousand and eighty-six *post-mortem* examinations, during the latter years of a residence in that Infirmary, from notes taken at the time.

Statistical reports of the diseases of the patients for three years, and the medical expenditure for five years, were published in the *Lancet*, December 18, 1841, and June 18, 1842, and in the Reports of the Board of Auditors for the parish. In the Appendix of their Fifteenth Report was published my last Table of the Diseases admitted to the St Mary-le-bone Infirmary in 1846, showing the numbers admitted at each season, and the nature of the result, at four periods of life.

The following is a summary of that Table:—

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[1] *Lectures on the Operative Surgery of the Eye*, p. 158.

| DISEASES. | SEASONS. | | | | | | | | AGE. | | | | RESULT. | | | | TOTAL. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Winter. Dec., Jan., Feb. | | Spring. Mar., Apr., May. | | Summer. June, July, August. | | Autumn. Sept., Oct., Nov. | | Under 7 Years. | From 7 to 20 Years. | From 20 to 45 Years. | From 45 Years upwards. | Cured. | Relieved. | Incurable. | Dead. | Males. | Females. | Cases. | Proportion of Deaths to Cases treated. |
| | M. | F. | M. | F. | M. | F. | M. | F. | | | | | | | | | | | | |
| Digestive Organs, | 10 | 21 | 7 | 21 | 27 | 37 | 16 | 24 | 22 | 28 | 54 | 59 | 115 | 16 | 5 | 27 | 60 | 103 | 163 | 1 in 6. |
| Genito-Urinary Organs, | 7 | 19 | 7 | 22 | 7 | 17 | 6 | 24 | ... | 27 | 57 | 25 | 71 | 18 | 4 | 16 | 25 | 84 | 109 | 1 in 6·8. |
| Respiratory Organs, | 52 | 45 | 39 | 27 | 27 | 30 | 59 | 63 | 57 | 33 | 130 | 122 | 94 | 79 | 27 | 142 | 177 | 165 | 342 | 1 in 2·4. |
| Vascular System, Heart, Vessels, and Blood, | 14 | 13 | 10 | 13 | 10 | 9 | 13 | 17 | 19 | 19 | 29 | 32 | 26 | 24 | 5 | 44 | 47 | 52 | 99 | 1 in 2·22. |
| Nervous System, | 35 | 48 | 33 | 37 | 32 | 41 | 37 | 39 | 10 | 24 | 156 | 112 | 62 | 61 | 119 | 60 | 137 | 165 | 302 | 1 in 5. |
| Diseases of the Eye, | ... | 3 | 1 | 3 | 2 | 1 | 7 | 4 | 10 | 9 | 1 | 1 | 17 | 1 | 3 | ... | 10 | 11 | 21 | |
| Locomotive Organs, and Cellular Tissue, | 40 | 39 | 31 | 25 | 42 | 37 | 53 | 47 | 78 | 53 | 87 | 96 | 178 | 44 | 40 | 52 | 166 | 148 | 314 | 1 in 6. |
| Skin Diseases, | 5 | 36 | 13 | 40 | 9 | 23 | 10 | 30 | 49 | 88 | 20 | 9 | 154 | 9 | 2 | 1 | 37 | 129 | 166 | 1 in 166. |
| Eruptive Fevers, | 12 | 12 | 23 | 28 | 7 | 7 | 4 | 9 | 45 | 24 | 13 | 20 | 85 | 4 | ... | 13 | 46 | 56 | 102 | 1 in 7·84. |
| Fever, | 21 | 21 | 23 | 34 | 20 | 35 | 16 | 42 | 7 | 55 | 100 | 50 | 195 | ... | ... | 17 | 80 | 132 | 212 | 1 in 12·4. |
| Destitution, | 2 | 2 | 1 | 4 | ... | 3 | 5 | 4 | 1 | 15 | 5 | ... | 3 | 18 | ... | ... | 8 | 13 | 21 | |
| Parturient Women (Lying-in Ward), | ... | 73 | ... | 72 | ... | 49 | ... | 46 | ... | 56 | 183 | 1 | 240 | 69 married.<br>171 single. | | * | ... | 240 | 240 | |
| Total of the whole, | 198 | 332 | 188 | 326 | 183 | 289 | 226 | 349 | 298 | 430 | 835 | 528 | 1240 | 274 | 205 | 372 | 793 | 1298 | 2091 | 1 in 5·88. |

*Note.*—92 casual cases, mothers with sick children, etc., have been omitted from the Table.

* 20 infants died within the first month.

Nearly one-fourth of the deaths for 1846 were from pulmonary consumption alone. In comparing this with former years, we find an increase of 1 per cent. in the mortality, attributable to the excessive and long-continued cold of the winter of 1845–6, which caused great distress and sickness amongst the poor out of doors. In the workhouse, which was crowded by about 2000 persons, there were 119 deaths, principally of those who were suffering from pulmonary complaints of old standing. The average number in the workhouse under the treatment of my esteemed colleague, the late Dr Allen, was 303. The number of orders presented during the year for medical advice and attendance amounted to nearly 9000. In the district of the parish north of the New Road, Mr Finch attended 2005 patients at their own homes, of whom 104 died; and in the district south of the New Road, 2215 were attended at their own homes by Dr Woolfryes, of whom 115 died. The mortality that year amongst the patients attended, and supplied with medicines from the Infirmary, amounted to 710. The population of the parish, according to the census of 1841, was 139,454; and the proportion of persons receiving medical relief as paupers in 1846 was 1 in 139.

The whole of the cases examined during a period of eight years, from 1839 to 1847, are here shown according to age, as in the above Table. In several numbers, from 147 to 172, of the *Edinburgh Medical and Surgical Journal*, and in the *Edinburgh Medical Journal* ending Vol. III., No. 6, are contained an account of the *post-mortem* examinations to the end of 1842. It is now intended to conclude the subject by giving the remainder, from 1843 to 1847, commencing a second series of pathological contributions with the diseases of the nervous system. Where it is practicable, as many cases of the same disease as possible will be grouped together; and, for the sake of brevity, an analysis only will be given.

### CONVULSIONS. (9 MALES.)

CASE 1.—Aged 10 days. From lying-in ward. Body wasted; weight, 73 oz.

*Head.*—Brain natural; weight, 13·2 oz.

*Chest.*—Organs natural.

*Abdomen.*—Do., do.

CASE 2.—Aged 21 days. The mother had been subject to epileptic fits for several years. The child showed no disease, but general wasting, to account for its death.

*Head.*—Brain natural in appearance; the right cerebral hemisphere $\frac{1}{4}$ oz. heavier than the left. The entire brain weighed 15 oz.

*Chest.*—Viscera natural.

*Abdomen.*—Intestines contracted; glands large; general wasting. Weight of body, 5 lbs.

Case 3.—Aged 1 month. The mother has been an epileptic since childhood, and had a great many fits about the time she gave birth to this, her first child. Since her confinement she has had three or four fits every day. The child was free from fits during the first fortnight; but, during the last, it has had them very frequently, and in character resembling those of the mother. About the same time that the fits came on, three small abscesses appeared; one on the right hand, one on left knee, and the third on the chest.

*Head.*—Brain appeared natural; weight, 13·7 oz.

*Chest.*—The abscess, or rather ulcer, on the chest, which was the size of a half-crown, communicated internally between the costal cartilages with the mediastinum; and on the anterior edge of each lung was an inflamed spot, about the size of a split pea.

*Abdomen.*—Organs natural.

Case 4.—Aged 9 months.

*Head.*—Brain exanguious; more fluid than natural in the ventricles and in the base; weight, 25·2 oz.

*Chest.*—Organs natural; the right lung weighed 1½ oz., the left 2 oz., and the heart ½ oz.

*Abdomen.*—The small intestines throughout were uniformly contracted to about half the usual calibre; the mucous membrane was healthy, and the organs normal. Weight of the liver, 6 oz.; spleen, ½ oz.; stomach, ½ oz.; pancreas, ¼ oz.; kidneys, 1 oz.; renal capsules and thymus, each ½ drachm. The body weighed 7 lbs., and measured 25 inches.

Case 5.—Combined with pneumonia, etc. Aged 5 years. Admitted from infant school. Died within four days. Had symptoms of fever; the tongue furred; the cerebral symptoms came on the day after admission, and became rapidly worse. The child was convulsed; its extremities cold; and he was quite unconscious for several hours before death.

*Head.*—No redness externally; on the contrary, rather pale; more fluid than natural in the ventricles. Encephalon, 34¼ oz.

*Chest.*—The lower lobes of lungs hepatized; the structure of the right not so firm, nor the disease so extensive in it as in the left lung; both were quite red, and a portion of each sank in water; the right weighed 7, the left 8½, oz.

*Abdomen.*—Old peritoneal adhesions to the liver.

Case 6.—Aged 30 years. Under treatment nearly 12 months. When admitted, had ulcerated legs. He suffered from convulsions occasionally, and afterwards became imbecile. He was confined to bed for a long time, and had bedsores, which subsequently healed. A few days before death, he refused food, and symptoms of pulmonary disease supervened.

*Head.*—About 2 oz. of red fluid escaped when the skull-cap was removed; the arachnoid was thickened, and the pia mater œdematous; the brain firm, weight 40¾ oz.

*Chest.*—Pleuritic adhesions on right side, and the lower lobe of the left lung was in first stage of pneumonia; the right lung weighed 21½, and the left 32, oz. Heart healthy.

Abdominal organs natural.

Case 7.—Combined with paralysis, etc. An ornamental painter, aged 45 years. Subject to convulsions. While a patient in the Infirmary, had four attacks in as many weeks. His left arm was partially paralysed and stiff, but he could use it a little. His symptoms appeared to have been a little relieved by cupping. After the fits, he remained several hours, sometimes a whole day, without food; became noisy, and continued so for about a week, always talking when awake. He required an anodyne at night. He became emaciated, and gradually sank.

*Head.*—Opacity of the arachnoid; more fluid than natural on the surface, and about 3 ounces in the cerebral ventricles. There was softening and yellow discoloration at base of right corpus striatum. Weight of encephalon, 44¼ oz.

*Chest.*—Pneumonia, in first stage, in lower lobe of left lung.

*Abdomen.*—Organs natural.

Case 8.—Aged 46 years. A slater; subject to epilepsy for eleven years, and to cough for three months, before admission. On the eighth day he died convulsed, and rather suddenly.

*Head.*—The arachnoid, covering the cerebral hemispheres and interior of ventricles, was adherent; also the choroid plexus. The colour and structure of the brain was natural; its weight 48 oz. The convolutions were full, but not flattened; membranes rather dry. On the surface of corpus striatum the membrane was rough, like sand-paper, from small granules just perceptible.

Case 9.—Aged 86. In the workhouse, and subject to convulsions for several years. He was of a constipated habit, and constantly requiring medicine.

*Head.*—Congestion of blood in the veins; about the size of a walnut at the posterior portion of the right cerebral hemisphere was of a fawn colour, and contained glairy matter. Weight of brain, 45¾ oz.

*Chest.*—Old pleuritic adhesions; emphysema and œdema of lungs; the right weighed 33½ oz., and the left 32½ oz. Ossific deposits in the aorta.

*Abdomen.*—Liver soft; weight, 39½ oz.

Case 10.—Aged 14 years. *Tetanus*, on the seventh day after an injury to the ball of left great toe, the joint of which was opened by a fall from a horse. He was admitted four days after the accident.

Pulse 140. There was a deep cut on the first joint of the left great toe, which was inflamed. On the second night after admission, complete trismus came on, with bending back of the neck; face covered with profuse perspiration; the voice distinct. Leeches were applied to the neck, extract of belladonna to the spine, turpentine fomentations were used, and calomel and jalap. Within a very short time, any attempt to swallow produced convulsive contortions, and the face became purple; perspiration over the whole body became general. The wound in foot looked well, and almost free from swelling: this was his state during the day. At 10·30 P.M. he was much worse in every respect; still sensible; pulse 100, very feeble; frothing at mouth. Enemata of beef tea administered. He died soon after midnight.

*Head.*—Brain natural; weight, 48 oz. The spinal marrow rather dry, especially the under surface; weight, 1¾ oz.

*Chest.*—Intense redness of the lining membrane of the trachea and bronchial tubes, particularly at the back part. Lungs and heart natural.

Abdominal organs natural.

### CONVULSIONS. (10 FEMALES.)

CASE 11.—Aged 3 weeks. Premature birth, 7½ months; weighed 3¾ lbs. the day after it was born, and only 3½ lbs. the day after it died.

*Head.*—The brain appeared natural, and weighed 12·1 oz.

The organs of the chest and abdomen also appeared natural.

CASE 12.—Aged 1 month. Convulsions of a few hours' duration.

*Head.*—About 1 drachm of fluid in the lateral ventricles. There was redness of the structure of the brain. Weight of brain, 16 oz.

*Chest.*—The organs were natural.

*Abdomen.*—Organs natural, with the exception of a cyst, containing fluid, in the broad ligament of the uterus.

CASE 13.—Aged 3 months. Mother insane. Marasmus; slight enlargement of the mesenteric glands; general emaciation. Weight of body, 101 oz.

*Head.*—Brain natural; weight, 19·7 oz.

*Chest.*—Organs natural.

*Abdomen.*—Viscera natural.

CASE 14.—Aged 4½ months. Convulsions, attended by sickness and diarrhœa, for three days before death, which appeared to arise from suffocation, some of the matter from the stomach having got into the bronchial tubes.

*Head.*—Brain congested with blood; weight, 24·4 oz.

*Chest.*—White matter, very much resembling the contents of stomach, in bronchial tubes.

*Abdomen.*—Organs natural.

Case 15.—Aged 5 months. When admitted, was said to have diarrhœa, and to have been convulsed; very cold; seemed better on the day after admission; on the following day she died, rather suddenly, in convulsions.

*Head.*—Brain rather congested; weight, 17·8 oz.

*Chest.*—Organs natural.

*Abdomen.*—Intestines appeared thin; the mesenteric glands were slightly enlarged. No organic change to account for death. Body emaciated; weight, 96 oz.

Case 16.—Combined with tubercles in lungs. Aged 2 years. Admitted from nursery, with cough, which did not improve by treatment. She wasted away, became hectic, had a fit of convulsions on seventh day after admission, and died.

*Head.*—About 1 ounce of clear fluid in the lateral ventricles; the brain in other respects natural; it weighed 38½ oz.

*Chest.*—Pleuritic adhesion of the upper portion of the lower lobe of left lung, in which was a scrofulous tumour the size of a walnut, containing a small cavity the size of a horse-bean; there were miliary tubercles on the surface, and in the vicinity of the tumour; and the bronchial glands on left side were scrofulous. The right lung weighed 3, the left 3½, oz.

*Abdomen.*—Spleen rough on surface, from a dark false membrane which covered it. The spleen weighed 1¼ oz.

Case 17.—Combined with hydrocephalus. Aged 7 years. Subject to fits since she had a fright by falling backwards into water. When admitted, her eyes were heavy, she sighed deeply, and her bowels were confined; she fell into a drowsy, heavy state, and so continued until death, which took place eight days after admission.

*Head.*—Convolutions flattened; brain congested with blood; lateral ventricles distended, and contained 3 oz. of clear fluid. Encephalon weighed 38¾ oz.

*Chest.*—Some frothy mucus in bronchial tubes.

*Abdomen.*—Organs appeared natural; slight congestion of mucous membrane of great intestines.

Case 18.—Aged 27 years. Convulsions, from chronic inflammation of the brain. Married; no family. Died three days after admission, having been attended for the preceding six months at her own residence, from the Infirmary, by Mr Obré. She had, four months previously, applied to an eminent oculist, on account of dimness of vision, attended with pains in the eyes, forehead, and crown of head. She continued under his treatment for three months, and became blind, and remained without treatment for a month. At the time of her application to the Infirmary, she was unable to distinguish between light and darkness; eyes open; staring, rolling eyeballs; pupils rather dilated; the right eye a little sensitive, the globe hard to the touch. She was cupped, salivated; and, in three weeks after, an issue was put in the back of neck. She lost the pain in her head, and could see sufficiently to enable her to find her way about. At the close of two months she became worse, and totally blind; subsequently she had convulsions, which increased greatly in severity during the month previous to her death. She had as many as 16 fits within three hours.

*Head.*—Arachnoid dry; congestion of blood in the brain; the anterior lobes and inferior surface of the cerebral hemispheres adherent to the skull; the capillary vessels in the sheath of the optic nerves, as well as the capillaries of the brain, injected with red blood. No fluid in lateral ventricles; cerebral structure unusually tough; weight of encephalon, 41¾ oz.

*Chest.*—The lining membrane bronchial tubes very red; the lower lobes of both lungs in the first stage of pneumonia; right 25, left 24½, oz.

*Abdomen.*—Two ovarian cysts, each the size of a filbert, and filled with straw-coloured fluid. The other organs appeared natural.

CASE 19.—Aged 28 years. Puerperal convulsions. The fits occurred twice before delivery; after which she was for some hours free from them. She spoke cheerfully, and appeared better. The fits returned the same evening. She was bled, and died the following day in the lying-in ward.

*Head.*—Cerebral vessels engorged; brain remarkably firm; about 1 oz. of blood escaped from the skull. Weight of encephalon, 44½ oz.

*Chest.*—The lower lobes of both lungs congested with blood; the right 27, left 30¼, oz.

*Abdomen.*—Organs natural.

CASE 20.—Aged 40 years. Under treatment ten days. When admitted, she was in a torpid state; her pupils contracted, and insensible to light. She had a fit of convulsions before admission, having, five days previously, complained of pain in head. Her insensibility continued for two days. Subsequently she seemed to recognise people. On the tenth day her breathing became stertorous, and she died in convulsions.

*Head.*—Brain natural; weight, 44¼ oz.

*Chest.*—Part of the back of right lung, about the size of the palm of the hand, in first stage of pleuro-pneumonia; a little lymph on surface; a small portion of the lung sank in water.

*Abdomen.*—Organs natural.

No cause for convulsions discovered.

## EPILEPSY. (7 MALES.)

CASE 21.—Aged 18 years. Epilepsy since childhood. Found dead in bed. He had hemiplegia of the right side from arrested development in the opposite cerebral hemisphere. The right wrist was contracted, and firmly flexed; and the right forearm and arm each 2 inches less in circumference than the left. The right ankle was likewise contracted; the right thigh was 2 inches, and the calf of right leg 2½ inches, less in circumference than the left.

*Head.*—There was an extensive loss of substance on the outer side of the left cerebral hemisphere. The space was filled by fluid contained in a reticular membrane; the cerebral structure beneath which was smooth, unusually firm, and of a rusty colour. The right cerebral hemisphere weighed 21½, the left 14¾, oz; the entire brain, 41¼ oz. Beyond slight congestion of blood in the right lung, the thoracic and abdominal organs were natural.

CASE 22.—Aged 19 years. Epilepsy. Was admitted with typhus fever four days before death. The tongue dark coloured and furred. He had been subject to epilepsy from childhood, and was said to have had as many as 30 fits in 24 hours.

Head only examined. Brain natural; weight, 46¾ oz. In the left temporal fossa the ridges were unusually prominent; not so on the opposite side.

CASE 23.—Aged 20 years. Subject to epilepsy for four years, which was attributed to a fright, having been awakened from sleep by his sister, who was wrapped in a white sheet.

*Head.*—On upper and inner surface, and about the centre of left hemisphere, the membranes of the brain were turgid, yellow with gelatinous fluid, and formed a swelling about the size of a filbert, three quarters of an inch below which, about the circumference of a sixpence, had a gelatinous appearance, gradually becoming firmer on cutting downwards; the portion of skull opposite the swelling was quite thin, and semi-transparent. There was congestion of blood in the cerebral veins. The weight of the brain was 47½ oz.

*Chest.*—The lower lobes of both lungs were of a dark purple colour; a portion of the right readily sank in water, and broke down under the finger. Bronchial lining membrane was red. The right lung weighed 28, the left 24, oz.

*Abdomen.*—Organs natural.

CASE 24.—Aged 25 years. Was four months in the Infirmary, to which he was admitted from the workhouse in a state of mania. He was reported as having fractured his skull by a fall from a ladder about seven years before, two weeks after which he had an epileptic seizure; and ever since he had been subject to similar fits at irregular intervals,—sometimes having five or six of a night, and seldom with more than three days' intermission. Occasionally he was very noisy; always morose in his manner, and his expression vacant. He gradually became emaciated, and derived no benefit from medical treatment. For the last week he had symptoms of gangrene of lungs; breath most offensive, and a very dark sanies was expectorated.

*Head.*—Brain large; weight, 49 oz. No sign of the reported fracture of skull visible.

*Chest.*—Recent pleuritic adhesions about the centre of the right lung; and the anterior portion of the upper lobe in a gangrenous state; in the apex was a large cavity, filled with dark sanies, and crossed by bands. The lower lobe of left lung was congested with blood. The right lung weighed 40½, and the left 27½, oz.

*Abdomen.*—A small cyst in the right kidney. The other organs natural.

Case 25.—Aged 33 years. Upwards of three months under treatment; admitted in a state of mania. No account of his early history; but it was ascertained that he had had several severe fits of epilepsy before admission. He improved on treatment, and was free from fits until about a fortnight before death, when they returned with great violence, and so continued for three days. For three days before death his state was comparatively tranquil.

*Head.*—Opacity of the arachnoid, and a rough appearance in the interior of fourth ventricle, as also in the lateral ventricles. Brain large; weight, 51¾ oz.

The thoracic and abdominal organs were natural.

Case 26.—Aged 41 years. Subject to epilepsy for many years; rather idiotic. His brother had been treated in the Infirmary for epilepsy. Soon after admission symptoms of pulmonary disease showed themselves, and he became much worse in every way, and lost flesh rapidly. He died one month after admission.

*Head.*—Brain natural; weight, 38½ oz.

*Chest.*—Pleuritic adhesions on left side; the side contracted, and the lung so firmly adherent that it had to be cut away; it presented many tuberculous cavities, with numerous hard tubercles; was partly fawn-coloured, partly red; and it was firmer than the liver; weight, 26½ oz. Right lung emphysematous and œdematous, and seemed nearly double the natural size; weight, 38½ oz.; a few tubercles were in its apex; and its structure was, in many parts, both grey and soft.

*Abdomen.*—Liver fatty, and very large; weight, 99½ oz. The other organs natural.

Case 27.—Aged 48 years. Upwards of three months in the Infirmary; admitted in a state of violent mania, from which he soon partially recovered, and remained tolerably tranquil until about a week before his death, when he was again attacked with epileptic fits, and had 15 in one night. He became very feeble, never rallied, and died from pneumonia.

*Head.*—Congestion of blood in brain; the left cerebral hemisphere was half an ounce heavier than the right. The brain large; weight, 53½ oz.

*Chest.*—The lower lobe of left lung in third stage of pneumonia; weight, 41 oz.; right lung, 29 oz.

Abdominal organs natural.

### EPILEPSY. (3 FEMALES.)

CASE 28.—Aged 32 years. Subject to fits for three years from cerebral disease; they became very frequent and severe before her death; the left side became paralysed, but consciousness still remained. She was admitted to the Infirmary two days before her death; and the convulsions continued almost without intermission afterwards, until her decease.

*Head.*—Congestion of blood in the cerebral veins; some of them containing clots of fibrine, partly deprived of colouring matter. Opacity of the arachnoid. A tumour, the size of a walnut, yellow and gelatinous internally, in the anterior portion of the right hemisphere; the membrane adherent to the tumour; and the surrounding portions of brain unusually firm. Weight of brain, 46½ oz.

*Chest.*—The lower lobe of right lung in the first stage of pneumonia; weight, 23 oz.; left, 17 oz.

*Abdomen.*—Organs natural.

CASE 29.—Aged 34 years. A patient in the workhouse when she died; she was confined to bed with pleuro-pneumonia of the left lung. Fits periodical; not frequent; stupid after their accession, but well during the intervals.

*Head.*—Cerebral convolutions flattened; weight of brain, 48 oz.

*Chest.*—Recent lymph on left pleura; the lower lobe left lung in the second stage of pneumonia; the right lung natural; weighed 16½, the left 34, oz.

*Abdomen.*—The organs appeared natural.

CASE 30.—Aged 38 years. A patient in the workhouse. An epileptic from infancy. Of a costive habit, and subject to ascarides. She died suddenly in a fit. Her mother stated she had five children, and that all were healthy with the exception of the one just dead. She was the first child; labour was tedious, and her head suffered much in the delivery. When two years old, the first attack of fits came on in rapid succession, and continued for twelve hours. Eight months elapsed before she had a second attack, which lasted from two to three hours. After the second attack, the fits occurred every two or three months; as she grew older, she had them much oftener. When about five years old, after a slight fit, she partially lost the power of the left side, which she never recovered; and the convulsions were afterwards felt most on that side. Her intellect was always childish; her menses were never regular—once only in six or eight months, and very small in quantity; fits much worse at those times. Of late years, the fits occurred every week in hot weather; in cold, she often had exemption for four or five weeks. When about 25 years of age she fell into the fire, and her left arm was burned. She was about eleven months in the workhouse; her general health good; she always knew her mother when she visited her.

*Head.*—The right cerebral hemisphere was observed to be smaller than the left; no other change. The right weighed 18¾ oz.; the left do., 20½ oz.; the encephalon, 45¾ oz.

The thoracic and abdominal organs were natural.

CASE 31.—Aged 16 years. *Male Idiot.* Previous history not known.

*Head.*—Skull, inner lobe like enamel, hard, thin, and white; dura matter, covered with a thin layer of blood and fibrine, forming a red, dotted membrane. The general appearance of the brain was that of a child; weight, 42¾ oz.

*Chest.*—Pneumonia, in first stage, in lower lobes of both lungs; heart small; white striated appearance in aorta. The right lung weighed 15½, the left 13½, and the heart 5, oz.

*Abdomen.*—Liver small; venous hepatic congestion on surface; weight, 27 oz. Intestines healthy.

## MANIA. (10 MALES.)

CASE 32.—Aged 39 years. A musician. Suffered great anxiety about his profession; was so very violent when admitted to Infirmary, as to render necessary his being placed under restraint. After a short time, being worn out by want of sleep, fevered and feeble, he became quieter. He took from 1 to 1½ drachm-doses of laudanum every 4 hours for 2½ days—during the last 12 hours, combined with one grain of tartar emetic—without producing sleep. The tongue was dry, and sordes on teeth. He died on the fourteenth day after admission.

*Head.*—Opacity of arachnoid; fluid beneath it, and in the ventricles. The left hemisphere weighed half an ounce more than the right. Weight of encephalon, 48¾ oz.

*Chest.*—Old pleuritic adhesions on left side; apoplexy, lower lobe, left lung; the diseased part the size of a walnut, with pleuro-pneumonia around it. The right lung weighed 20½, the left 23½, oz.

*Abdomen.*—Organs natural.

CASE 33.—Aged 42 years. A painter artist. His mind wandered for some time before admission. At times he broke out violently, when drachm-doses of tincture of cannabis had a most salutary effect. For some time before his death, which took place 35 days after admission, his senses returned.

*Head.*—Brain large, and contained more fluid than natural. Weight, 50¾ oz.

*Chest.*—Old pleuritic adhesions on left side only. The apex of right lung contained a few small tuberculous cavities. The upper and part of the lower lobe of left lung almost entirely excavated; some pneumonia also on lower lobe. Weight of right lung, 27¾ oz.; of left, 35½ oz.

*Abdomen.*—Ulcerated spots on various parts of colon. Organs otherwise natural.

Case 34.—Aged 45 years. A tailor; had been a lunatic for several months during the preceding year, but recovered sufficiently to work at his trade. He returned to his home, and came back the following summer afflicted as before. In the Infirmary he became restless and emaciated; had diarrhœa, and a tendency to paralysis. He died six weeks after admission.

*Head.*—The veins of brain, and the cerebral structure generally, congested with blood; brain large; weight, 51¾ oz.

*Chest.*—Slight pleuritic adhesions; lower lobe of left lung in first stage of pneumonia.

*Abdomen.*—The mucous membrane of both great and small intestines red, apparently inflamed, and slightly thickened.

Case 35.—Aged 45 years. Died at Hoxton Asylum. Body brought for interment.

*Head.*—Two ounces of serum in the lateral ventricles. The size of a pigeon's egg of the anterior portion of right cerebral hemisphere resting on the orbital plate, of a fawn colour, and in a softened state. Weight of brain, 44¼ oz.

*Chest.*—An irregular backward curvature of spine. A cyst, the size of an orange, attached to the spine, containing chalky, scrofulous, and fatty matter, with a large proportion of cholesterine. Pneumonia right lung; weight, 32½ oz. Strong pleuritic adhesions on left side. The left lung weighed 19½ oz.

*Abdomen.*—Bladder distended; kidneys and liver congested with blood.

Case 36.—Aged 45 years. Sent from the workhouse in a state of mania to the Hoxton Asylum, where he died. His body was brought back for interment.

*Head.*—Opacity of the arachnoid; about 3 oz. of clear fluid in the lateral ventricles. The brain unusually firm; weight, 49 oz.

*Chest.*—Old pleuritic adhesions; acute bronchitis. The lower lobe of right lung in first stage of pneumonia; weight 30, left 20, oz. Old adhesions between the heart and pericardium; weight of heart, 15 oz. Bony deposits in the aorta.

*Abdomen.*—Effusion of blood in one renal capsule. Liver, 58½ oz.

Case 37.—An Italian, aged 48 years. One month under treatment in the Infirmary; incoherent and noisy.

*Head.*—Congestion of blood in brain; structure firm; weight, 42½ oz.

*Chest.*—Congestion and œdema of the lower lobe and back part of right lung, which weighed 34, the left 15¼, oz.

*Abdomen.*—Gall bladder much distended; liver, 47 oz. Organs and intestines natural.

Case 38.—Aged 53 years. Died at Hoxton Asylum; remains brought to be buried; no history.

*Head.*—Opacity of arachnoid, and slight adhesion; lateral ventricles contained 2 oz. clear fluid; weight of brain, 46½ oz.

*Chest.*—Slight pleuritic adhesions; congestion lower lobe right lung; bony deposits in aorta. The right lung weighed 26½, the left 18, oz.

*Abdomen.*—Liver large, 60 oz. Other organs natural.

Case 39.—Aged 53 years. Brought in by police, in a state of mania, from Duke Street.

*Head.*—Lateral ventricles contained about 2 oz. of clear fluid. The brain was firm; weight, 43¾ oz.

*Chest.*—Pleuritic adhesions on both sides; most firm on right. Phthisical cavities in apex of right lung, the largest lined by a membrane, and about the size of a walnut; pneumonia in lower lobe. Miliary tubercles in apex of left lung, and pneumonia in second stage; lower lobe sank in water, as also a portion of apex, which was pale, firm, and seemed indurated. The right lung weighed 26½, the left 21, oz.

*Abdomen.*—Organs natural.

Case 40.—Aged 59 years. A horse-keeper; a strong man; for a great many years subject to fits of abstraction. He had served with an officer in the Peninsula, and for the last three years had strange fancies respecting some of the officers most distinguished in the Peninsular war, conversing as if they were present. He believed that he belonged to the 7th Hussars. He had been a patient in the Infirmary for several months, and about six months before his death he was admitted to the ward for the insane, where his health and mental state improved so much, that at the repeated and urgent solicitations of his friends he was discharged; but he returned within two or three weeks in a much worse state than before: his pupils were dilated, he loathed food, gradually became emaciated, and died in five weeks after re-admission.

*Head.*—The surface and structure of brain were congested with blood. The brain was firm; the convolutions flattened; the ventricles contained from 3 to 4 oz. of clear fluid; and the parietes of their interior were traversed by large veins, which remained patent after the fluid had escaped. Fluid in spinal canal. The brain weighed 44¼ oz.

*Chest.*—The lower lobe of right lung in the first stage of pneumonia; general bronchitis. The right lung weighed 47, the left 24, oz.

CASE 41.—Aged 80 years. In a ward for the infirm; subject to asthma for four years. He was suddenly seized with a paroxysm of mania, and the orthœpnea became quite relieved. He was removed to the Infirmary, and died in eleven days.

*Head.*—The dura mater was distended, which is unusual at such an advanced age. The arachnoid membrane dry; brain natural; but little fluid in the ventricles; weight, 46½ oz.

*Chest.*—Old pleuritic adhesions; emphysema of the upper lobes; chronic pneumonia of the lower lobes, especially of the right lung, which was very friable; weight 36, left 28; heart large, 15½ oz.; ossific deposits in the arteries.

*Abdomen.*—Kidneys granular and wasted; weight, 6½ oz. A cyst, the size of a filbert, in the right kidney.

### MANIA. (10 FEMALES.)

CASE 42.—Aged 26 years. About three months discharged from Hanwell Asylum; admitted to the Infirmary for pulmonary phthisis ten weeks before death. About eight weeks after her admission she became maniacal.

*Head.*—Slight congestion of blood in the cerebral structure. In other respects the brain appeared natural; weight, 39¾ oz.

*Chest.*—Numerous tubercles and tuberculous cavities throughout the right lung, and in the apex of the left; the right 16, the left 20, oz.

*Abdomen.*—Stomach large, it extended to the umbilicus; weight, 7½ oz. Liver, 63; kidneys, 10½.

CASE 43.—Aged 38 years. A schoolmistress; for a considerable period in the Infirmary for rheumatic gout; fingers, wrists, and knees contracted. She became at first strange in her manner, occasionally violent, and at length maniacal. She was sent to the Asylum at Bow, where she remained for several months, and died from pleuritis and hydrothorax. The body was brought back for interment.

*Head.*—Congestion of blood in the cerebral veins; weight of brain, 46 oz.

*Chest.*—About three pints of fluid in the right pleura; the right lung coated with tough lymph; weight 12½, left 16½, oz. The structure natural.

*Abdomen.*—Organs appeared natural.

CASE 44.—Aged 43. Brought from Clerkenwell; no previous history; eleven days in the Infirmary before death, in a state of stupor, and very feeble.

*Head.*—Opacity of the arachnoid; about one ounce of clear fluid in the lateral ventricles; brain 38¾.

*Chest.*—Redness of the bronchial lining membrane; pneumonia of the lower lobe of right lung, weight 21½ oz.; left healthy, weight 11½ oz.

*Abdomen.*—Redness of mucous membrane of colon.

CASE 45.—Aged 49 years. Admitted three weeks before her death in a state of mania; she attempted to drown herself the day before her admission.

*Head.*—The lateral ventricles contained between two and three ounces of clear fluid; weight of encephalon, 44½ oz.

*Chest.*—Organs natural.

*Abdomen.*—Gall bladder distended with very dark bile; liver dark-coloured, small, weighed 23½ oz. In the renal capsules was some osseous matter, composed of a little carbonate, and a large proportion of phosphate of lime; similar matter in the mesenteric glands. The body emaciated; weight, 48 lbs; height, 5 feet.

CASE 46.—Aged 52 years. Under treatment in the Infirmary for arachnitis; pupils dilated; she became maniacal; she was sent to Peckham Asylum, where, after a lapse of between two and three months, she died. The body was brought back for interment.

*Head.*—Cerebral convolutions flattened; the ventricles contained from 3 to 4 ounces of clear fluid; the lining membranes appeared rough; weight of encephalon, 48 oz.

*Chest.*—Lungs healthy; atheromatous state of the aorta.

*Abdomen.*—Organs natural. Eighteen gall stones of cholesterine, of various sizes, in gall bladder.

CASE 47.—Aged 56 years. In the workhouse; employed in the laundry; her legs were ulcerated, for which she was treated in the surgical ward. When the ulcers were healed she became maniacal, and was sent to the Hoxton Asylum, where, after some weeks, she died.

*Head.*—Brain appeared natural; weight, 41½ oz.

*Chest.*—Slight pleuritic adhesions; emphysema of lungs; redness and thickening of bronchial lining membrane; heart fatty, 13½ oz.

*Abdomen.*—Omentum and mesentery fatty. Weight of body, 118 lbs.

CASE 48.—Aged 58 years. Insane for about six weeks previous to admission; she became worse, exceedingly noisy; fancied herself, and those around her, in the torments of hell. Erysipelas of face and head set in three days before death, which occurred on sixteenth day after admission.

*Head.*—Purulent infiltration of cellular tissue beneath the scalp; pericranium easily separated; surface of brain much congested. The lateral ventricles were dilated, and contained one ounce of clear fluid; the central portion of brain was somewhat firmer than is natural. Encephalon, 39 oz.

*Chest.*—Lower lobe of right lung congested with blood.

*Abdomen.*—Organs natural.

CASE 49.—Aged 69 years. Remains brought from Hoxton Asylum for interment.

*Head.*—Venous congestion. Cerebral structure unusually firm; about one ounce of fluid in ventricles. Encephalon, 40¾ oz.

*Chest.*—Pleuritic adhesions on right side; lower lobe right lung in third stage of pneumonia, with purulent infiltration; redness of bronchial lining membrane. Weight of right lung, 27; of left lung, 14 oz.

*Abdomen.*—Kidneys granular, weight 6½ oz.; small fibrous tumour of uterus; other organs natural.

CASE 50.—Aged 71 years. Died at Bow Asylum.

*Head.*—Skull very thin in two places, each the size of a half-crown, about two inches above the eyebrows. Softening of the centre portion of brain—viz., the septum, fornix, and corpus callosum; about two ounces of clear fluid in the lateral ventricles. The left cerebral hemisphere was three-fourths of an ounce heavier than the right, and its anterior portion was softened. Encephalon, 43¾ oz.

*Chest.*—Old pleuritic adhesions on both sides; redness of the bronchial lining membrane, and a few tubercles in each lung.

*Abdomen.*—Viscera healthy.

CASE 51.—Aged 75 years. The patient, who at times was very violent, was sent to the Bow Asylum, where she died.

*Head.*—Opacity of arachnoid; more fluid than natural on surface, and in cerebral ventricles. Encephalon weighed 39¾ oz.

*Chest.*—Lungs natural; thickening of lining membrane; muco-purulent secretion in bronchial tubes.

*Abdomen.*—The organs natural.

(13 MALES.)

CASE 52.—Aged 29 years. *Melancholia.* A cabman; in a desponding state for many months; having been charged with robbing or cheating his employer, he was sent to Bow Asylum, and afterwards admitted to the Infirmary. He had a propensity for stealing food from the other patients, was very quiet and silent, and appeared lost, so as to be unable to give a rational answer to any question; he died five months after admission.

*Head.*—Upwards of an ounce of fluid in lateral ventricles; slight opacity of arachnoid, which was adherent between the hemispheres, particularly at the anterior part. Weight of encephalon, 50¾ oz.

*Chest.*—Old pleuritic adhesions on each side, and a few hard, grey tubercles in apex of right lung. The lower lobe of left lung, and the whole of the back part and under surface next the diaphragm, was rough from recent lymph which adhered to the parietes. Pneumonia of upper lobe and centre of left lung, which weighed 30; the right, 25 oz.

*Abdomen.*—Viscera natural.

CASE 53.—Combined with hydrocephalus. A schoolmaster, aged 46 years. Had *melancholia;* did not speak for two days after admission; this was his second attack; he had, eighteen months before, been in the insane ward of the Infirmary for two months, and was discharged recovered. For the last two months of his life he was so helpless as to require to be fed; he sank gradually, and died three months after admission.

*Head.*—The cerebral ventricles distended; they contained four ounces of clear fluid. The brain small, 41¼ oz.; the falx thin.

*Chest.*—Slight pleuritic adhesions; heart and pericardium closely adherent.

*Abdomen.*—Dark fluid in stomach; small calculi, size of pins' heads, in the pelvis of each kidney; the kidneys also contained small cysts; weight of right 6, of left, 5 oz.

CASE 54.—Combined with hydrocephalus. Aged 73 years. Died in chronic ward, workhouse. His mind had long been in a weak state; he had been once in the insane ward, and had attempted suicide.

*Head.*—An unusually large quantity of fluid in the cerebral ventricles. Encephalon weighed 50¾ oz.

*Chest.*—Organs natural.

*Abdomen.*—Organs natural.

### DEMENTIA. (5 MALES.)

CASE 55.—Aged 40 years. A patient in the idiot ward, workhouse. Had been a servant.

*Head.*—Arachnoid not thickened externally; the interior of brain unusually firm; the lining of the ventricles thick, strong, and tough; the septum lucidem was pulled and stretched forcibly without laceration; the grey matter on surface of corpus striatum was semi-transparent, and tough like the cornea of the eye. The lateral ventricles were moderately distended with fluid. Encephalon, 46½ oz.

*Chest.*—Extensive œdema, especially of left lung, which weighed 33½; the right, 27 oz.

*Abdomen.*—Viscera natural.

Case 56.—Aged 48 years. A pipe-maker. Had been under treatment in a lunatic asylum 3½ years. Was admitted to Infirmary, suffering from pulmonary phthisis; his conduct was quiet, but his language incoherent. As his lungs became more diseased, his mind became more collected, and at last he was quite rational. He spoke distinctly and well on Bible history and matters contained in Holy Writ, and his memory was exceedingly good. Diarrhœa prevailed for some time before his death, which took place about three months after admission.

*Head.*—Cerebrum large; pia mater congested with blood; brain rather soft. The left hemisphere was ¾ of an ounce heavier than the right. Encephalon, 53¾ oz.

*Chest.*—Old pleuritic adhesions on both sides; numerous tubercles, and extensive tuberculous cavities in both lungs; most in the left; the right lung weighed 22¼; the left, 15¼ oz.

*Abdomen*—Extreme redness of mucous membrane of small intestines; kidneys large; the right, 6¼; the left, 7 oz.

Anasarca of legs, and an ulcer on right ankle.

Case 57.—Aged 48 years. Insane for a long time; formerly a patient in the Infirmary. In a very low state on admission; had bed sores; died fifth day.

*Head.*—Arachnoid opaque; 1 ounce of clear fluid in ventricles; brain rather firm, 48¾ oz.

*Chest.*—Old pleuritic adhesions. Lower lobes of each lung congested with blood; bronchial membrane red and thickened; mucopurulent matter in the tubes.

*Abdomen.*—Kidneys small and firm; weight, 6 oz. Organs generally small.

Case 58.—Aged 51 years. Said to have had a fit two years before admission. Intellect quite gone; no paralysis; was noisy and troublesome for some time, but gradually became good-humoured. Latterly he lost flesh, became quite feeble from diarrhœa, and died about four months after admission.

*Brain.*—Opacity of the arachnoid; an ounce and half of fluid in the lateral ventricles. Weight, 43¼ oz.

*Chest.*—Old pleuritic adhesions at lower part of right lung; a small tuberculous cavity, size of filbert, in the apex. Some chalky matter, the bulk of a pea, was in apex of left lung; and isolated white miliary tubercles, each the size of a pea, were in the lower lobe of each lung. The right lung weighed 25, the left 24, oz. The heart small, 7 oz.

*Abdomen.*—Liver and kidneys large, and congested with blood; the lower two-thirds of mucous membrane of colon thickened.

Case 59.—Aged 73 years. A patient in the idiots' ward in the workhouse; bedridden for many months, and childish.

*Head.*—Opacity of the arachnoid, and thickening near the longitudinal sinus; the glandulæ pacchioni enlarged and prominent; the pia mater infiltrated with fluid; above an ounce of blood in the lateral ventricles; the brain firm; encephalon, 41¼ oz.

*Chest.*—Old pleuritic adhesions.

*Abdomen.*—Organs natural.

### DEMENTIA. (7 FEMALES.)

Case 60.—Combined with fluid in the ventricles. A braid-worker, aged 23 years. When admitted was said to have been labouring under monomania for the last three months. There was slight paralysis of the right arm, which afterwards improved; she was quiet, imbecile, and was placed among the other patients in the medical wards; but after a few weeks she became troublesome, and was removed to the vesanial ward. Her head was hot, and she suffered from sickness of stomach and constipation of bowels. She died rather better than six months after admission.

*Head.*—Brain small, 38¼ oz. The fornix, corpus callosum, and brain on surface of lateral ventricles softened; the ventricles were distended, and contained between two and three ounces of clear fluid.

*Chest.*—Low pneumonia, and congestion of part of lower lobe of right lung, which weighed 18½, and the left 12, oz.

*Abdomen.*—The left ovary adherent to body of uterus.

Case 61.—Age 37. A patient in the workhouse for a few days. Nothing known of her previous history. Died from influenza.

*Head.*—Arachnoid thickened; fluid of a greenish colour in the sac. The cerebral ventricles were distended with fluid; weight of encephalon, 44 oz.

*Chest.*—Redness of bronchial lining membrane, and muco-purulent matter in the tubes.

*Abdomen.*—Organs small.

Case 62.—Aged 46 years. For many months in the idiots' ward in the workhouse, where she died of cancer of the uterus.

*Head.*—Opacity of the arachnoid; about half an ounce of clear fluid in the lateral ventricles. Encephalon, 48¾ oz.

*Chest.*—Slight pleuritic adhesions, and redness of the bronchial lining membrane.

*Abdomen.*—Cancerous disease of the neck of uterus and vagina; bladder thickened and dark-coloured internally; the mucous membrane ulcerated; several white spots, the size of a split pea, on interior surface. The pelvis and ureter of left kidney dilated.

CASE 63.—Aged 51 years. Four months a patient in the insane ward; in a very feeble state, and suffered from asthma.

*Head*—Thickening of arachnoid; brain firm; weight, 41 oz.

*Chest.*—Old pleuritic adhesions; thickening of bronchial lining membrane; congestion of blood in the lower lobe of left lung. Weight of right lung 17, of left 20½, oz.

*Abdomen.*—Old peritoneal adhesions to the surface of the liver and uterus; the organs rather small.

CASE 64.—Aged 60 years. A patient in the idiots' ward in the workhouse, where she died from pulmonary apoplexy.

*Head.*—Fluid in the sac of the arachnoid, and about two ounces in the lateral ventricles; brain small, 35¾ oz.

*Chest.*—Emphysema of the upper lobes of both lungs; blood effused into the structure of a portion of the lower lobe of the right lung, which weighed 17, the left 14¾, oz.

*Abdomen.*—Viscera rather small.

CASE 65.—Aged 65 years. A patient in the lunatic ward. One week before her death she was attacked with pneumonia and typhoid fever.

*Head.*—Brain congested with blood; weight, 42½ oz.

*Chest.*—The lower lobes of both lungs red and soft; the right lung 21¼, the left 17¾, and the heart 11½, oz.

*Abdomen.*—Tympanitic; organs natural.

CASE 66.—Aged 83 years. Died at the Bow Asylum. Body brought for interment. Had an attack of phlegmanous erysipelas in the right leg, which confined her to bed till the time of her death.

*Head.*—Fluid in the sac of the arachnoid, and more than natural in the lateral ventricles; septum and fornix much softened; encephalon, 38½ oz.

*Chest.*—Slight pleuritic adhesions.

*Abdomen.*—Organs natural.

### PARALYSIS OF THE INSANE. (2 MALES.)

CASE 67.—Aged 31 years. Sent, as incurable, from Bethlem, where he had been under treatment for two years. Was admitted to lunatic ward; died three months after admission.

*Head.*—The brain, which was firm, did not fill the skull; the arachnoid was thickened; 2½ oz. of fluid in the ventricles and spinal canal. Encephalon, 46½ oz.

*Chest.*—The lungs natural; heart small, 8½ oz.

*Abdomen.*—Organs natural; intestines healthy.

CASE 68.—Aged 68 years. A tailor; eight months under treatment in the Infirmary; died in the ward for the insane. Was an industrious man, and of steady habits; memory quite gone.

*Head.*—More fluid than natural in the cerebral ventricles and spinal canal; the brain soft, and weighed 41¼ oz.

*Chest.*—Pneumonia in lower lobe of left lung; the right weighed 19, the left 25, oz.

*Abdomen.*—Organs natural.

### PARALYSIS OF THE INSANE. (1 FEMALE.)

CASE 69.—Aged 26 years. A dancer in a travelling theatre, and for five or six years subject to attacks of remittent mania; admitted to ward for insane eleven months before death. Paralytic symptoms, which were first observed in her articulation, increased rapidly, and her pupils were dilated. For three weeks before death she was entirely confined to bed.

*Head.*—The cerebral hemispheres preternaturally adherent along the mesial line; the lateral ventricles contained about 2 oz. of fluid; weight of the encephalon, 40¾ oz.

*Chest.*—Pleuritic adhesions on the right side.

Abdominal organs healthy, but rather below the natural size.

### DELIRIUM TREMENS. (3 MALES.)

CASE 70.—Aged 36 years. A chimney-sweep. Admitted in a state of delirium tremens; had been ill nine days; complained of severe headache, which was relieved by leeches; but the delirium increased, and he gradually sank into a state of insensibility. He had had no sleep for some nights, and large doses of opium were given without any benefit; he died on fifth day after admission.

*Head.*—Cerebral convolutions flattened; arachnoid lining the ventricles rather rough; they contained 3 oz. of clear fluid; brain large, 53½ oz.

*Chest.*—No symptoms of pulmonary disease were manifested whilst under treatment. Pleuritic adhesions on left side; little groups of miliary tubercles in both lungs; a small tuberculous cavity, lined by a membrame, in apex of left lung, and pneumonia, in its first stage, in the lower lobe; weight of right lung, 32½; left, 47 oz.

*Abdomen.*—Organs natural.

CASE 71.—Aged 47 years. A servant; single; brought to the Infirmary, two days before death, in a state of low muttering delirium; tongue dry and brown.

*Head.*—Cerebral veins congested with blood; numerous white specks, the size of a pin's head, on the arachnoid membrane; the pia mater infiltrated with fluid; the medullary portion of brain dark, and unusually congested with blood; weight of encephalon, 50½ oz.

*Chest.*—Cadaveric congestion of blood in the lungs; heart weighed 13 oz.; the cavities filled with fibrine.

*Abdomen.*—Liver large, 58 oz.; spleen large, 12½ oz.

Case 72.—Aged 57 years. Admitted four days before death; brought by the police in a destitute and very feeble state.

*Head.*—Opacity of the arachnoid; about two ounces of clear fluid in the lateral ventricles; softening of the septum lucidum; spinal canal filled with fluid; encephalon, 47 oz.

*Chest.*—Redness of bronchial lining membrane; engorgement of the lower lobe of the left lung; weight 22, right 19½, oz.

*Abdomen.*—Liver large, pale, and fatty; weight, 61 oz.

### MENINGITIS. (10 MALES.)

Case 73.—Aged 7 months. Arachnitis. Dilatation of the pupils, and a cough of four days' standing. Died five days after admission; he had two fits previous to admission, for which he was leeched. He appeared to be better until the morning of his death, when he had another fit, and expired in five minutes.

*Head.*—Substance of brain much softer than natural, which was the only change observable from the healthy state; weight, 29¼ oz.

*Chest.*—Redness of the lining of bronchial tubes, and a portion of the lower lobe of left lung in the first stage of pneumonia.

Abdominal organs natural.

Case 74.—Aged 8 months. Arachnitis. Capillary apoplexy of Cruveilhier, and softening of brain. Under treatment for five weeks in the Infirmary. Was pale; had a cough for three weeks prior to admission; for several days before death he frequently screamed violently, and became convulsed, the intensity of the fits gradually increasing.

*Head.*—The surface of the brain beneath the arachnoid was covered with purulent matter, which gave it a greenish yellow coat; the matter had got between the convolutions, and seemed entangled with the pia mater; the velum interpositum was covered with it; at the internal portion, and about the centre of right hemisphere above the corpus callosum, part of the brain, the size of a peach stone, was infiltrated with blood, and the surrounding portion was softened; the brain weighed 17¾ oz.

*Chest.*—Vesicular pneumonia in both lungs, particularly in the right; slight pleuritic adhesions.

*Abdomen.*—Liver fatty, weight 18½ oz.; mesenteric glands enlarged; intestines healthy.

Case 75.—Aged 11 months. Meningitis. Was five days under treatment. Was admitted with cough, very pale and feeble, and surface cold. Convulsions came on the day before death.

*Head.*—The upper surface of brain covered with purulent matter, and a thick layer of recent lymph on the vermiform process of cerebellum; weight of brain, 31 oz.

*Chest.*—Both lungs covered with recent lymph, also the heart.

Abdominal organs natural.

Case 76.—Aged 13 years. Arachnitis. Under treatment 43 days; symptoms of cerebral disease rather obscure; dulness on percussion below the right clavicle.

*Head.*—Convolutions flattened; brain large; the lateral ventricles contained about ½ oz. of fluid. At the base, on the pons varolii, and around the crura cerebri, there was a considerable deposition of lymph. Weight of brain, 43¾ oz.

*Chest.*—Pleuritic adhesions on the right side only; a vomica, size of a filbert, in the apex of right lung; pneumonia in the first stage in a portion of the lower lobe; weight, 13¼ oz. Left lung, 10¼ oz.; slight congestion in the lower lobe, and redness of the bronchial lining membrane.

*Abdomen.*—Preternatural adhesions between the right lobe of liver and the diaphragm. Tubercles on surface of spleen. One scrofulous cervical gland. Weight of body, 33 lbs.

Case 77.—Aged 33 years. A servant; bedridden from paralysis; admitted from workhouse chronic ward in a state of stupor, with muttering delirium; the pupils slightly dilated. The day before his death the delirium increased, with continued restlessness, and on the fourth day after admission he died.

*Head.*—The lateral ventricles contained, by measure, 5 ounces of clear fluid; the cerebral convolutions were flattened; slight softening of the walls of third and fourth ventricles, which also were dilated with fluid. Encephalon, 40½ oz.

*Chest.*—Old pleuritic adhesions on both sides, and the pleura coated with recent lymph. About a pint of dark fluid, mixed with flakes of lymph, in the left side; the left lung was compressed, and the right double its size; the bronchial lining membrane was unusually red; the lower lobe of the right lung was congested with blood. Weight of right lung 22½, of left 17½, ounces.

*Abdomen.*—Old peritoneal adhesions on convex surface of liver, and between the intestines; the liver of a dark red colour, weight 42½ oz. Kidneys large, and rather soft, 14 oz. A small cartilaginous body in the mesocolon.

Case 78.—Aged 45 years. Admitted with pneumonia, left lung; rusty sputa; bronchial respiration on left side; tongue loaded; cough frequent; considerable emaciation; death four days after admission.

*Head.*—Some yellowish-green looking matter beneath the arachnoid and between the convolutions; the lateral ventricles distended with clear fluid; encephalon, 48¾ oz.

*Chest.*—Part of the left lung in the second stage of pneumonia; it sank in water. The right lung weighed 21½, the left 29½, oz.

*Abdomen.*—Liver large; 83 oz. A chain of enlarged cancerous lymph glands extending from the left groin along the spine at each side of the aorta to the head of the pancreas, where it terminated in a mass as large as the pancreas itself. These scirrhous glands, pressing on the chyle duct, may probably have been the cause of the emaciation, as in Morgagni's case, letter 49, art. 19, sect. 18.

Case 79.—Aged 50 years. A seller of sawdust; brought in by the police; appeared to have been drinking; was generally restless and incoherent; his pulse was low. He was quite insensible for some time before death, which took place eight days after admission.

*Head.*—Skull hard; the convolutions very much flattened; between 6 and 8 oz. of milky-looking fluid escaped when the ventricles were opened, and some pus was found in each of the inferior cornu; the anterior of the ventricles were red; the septum lucida and corpus striatum in some places of a purple colour, the inner part rather soft for some depth beneath the lining membrane. The right hemisphere was one ounce lighter than the left; the encephalon weighed 45½ oz.

*Chest.*—Right lung slightly congested with blood.

*Abdomen.*—Organs natural.

Case 80.—Aged 50 years. For many months a patient in the Infirmary; was so deaf that he could hear nothing; he always spoke in a loud voice. He kept his bed constantly, and complained of violent and unceasing pain in the head. He was sent to the chronic ward, and died within three days.

*Head.*—Cerebrum natural. At the base the pia mater and arachnoid adherent, especially beneath the tentorium, and on the basilar process; cerebellum and medulla oblongata rather soft; encephalon, 43¼ oz.

*Chest.*—Pleuritic adhesions, especially on left side; pneumonia, left lung and back part of right.

*Abdomen.*—Liver uncommonly large and waxy; weight, 136 oz.; other organs natural.

Case 81.—Aged 64 years. A labourer; had a cough for six weeks, and pain in right side for one month, previous to admission. He had stupor and convulsions three days before his death.

*Head.*—Opacity of arachnoid membrane, and recent lymph on the surface. Encephalon, 41¾ oz.

*Chest.*—Firm pleuritic adhesions on right side; œdema of both lungs, the right infiltrated with bloody serum; tuberculous cavities in apices of both lungs, and the margins of the upper lobes emphysematous. The pericardium contained 2 oz. of straw-coloured fluid.

*Abdomen.*—Kidneys granular.

CASE 82.—Aged 78 years. A gardener; complained of pain in right side five days before admission; it was at times better, at others worse, and was increased by pressure. There were also pains, similar to rheumatic, felt about the shoulders. On the thirty-first day after admission he sat up in his bed, and was quite cheerful. He afterwards became speechless, remained so for nearly twenty-four hours, and died.

*Head.*—The arachnoid membrane had a yellowish appearance, from the quantity of matter beneath it on every part of the brain. It was in greatest quantity behind the pons varolii, around the crura cerebelli, and where that membrane is reflected on the medulla oblongata. Encephalon, 51½ oz.

*Chest.*—Pleuritic adhesions on the right side. In the lower and anterior portions, just above the diaphragm, there were 2 oz. of purulent matter; the portion of the rib below in contact with it, the size of a half-crown, felt rough; pain in this particular part was complained of during illness. The upper portions of both lungs emphysematous. Heart large, 15½ oz.; some fibrine attached to the sigmoid aortic valves; ossific deposits in the aorta and iliac arteries.

*Abdomen.*—Organs natural.

### MENINGITIS. (5 FEMALES.)

CASE 83.—Aged 27 years. Combined with pleuritis. A servant; she had had fever for two consecutive months previous to being admitted. She was in a state of stupor for two days before death, which occurred on the fourth day after admission.

*Head.*—There was lymph on the membrane at the base of the brain, and specks like miliary tubercles on the arachnoid. Encephalon, 44 oz.

*Chest.*—Slight pleuritic adhesions; the lower lobe of left lung coated with lymph.

*Abdomen.*—Organs natural.

CASE 84.—Aged 30 years. Married; swept a street crossing. When admitted, had fever and slight stupor, which latter increased; had a fit which lasted some time; it appeared she had been subject to fits occasionally. She died on the tenth day after admission.

*Head.*—Lymph beneath arachnoid on surface of brain, and the ventricles distended with fluid. Weight of encephalon, 40¾ oz.

*Chest.*—Pleuritic adhesions on both sides; the upper lobe of left lung was in second stage of pneumonia, part sank in water. The right lung weighed 13½, the left 17½, oz.

*Abdomen.*—Organs normal.

Case 85.—Aged 51 years. Had been subject to attacks of gastro-enteritis; the tongue coated thickly with a dark fur. Died two days after admission.

*Head.*—Opacity of arachnoid; surface of brain covered with jelly-like fluid. Brain congested with blood; weight, 42 oz.

*Chest.*—Lower lobe of left lung congested with blood.

*Abdomen.*—Redness of the lower of the ilium and cœcum.

Case 86.—Combined with peritonitis. Aged 56 years. Died in chronic ward, workhouse. Symptoms during the last day of life very similar to those of apoplexy.

*Head.*—Pus and serum in the pia mater covering the entire of cerebrum, cerebellum, and medulla; also in the vertebral canal. Encephalon, 45¼ oz.

*Chest.*—Slight pleuritic adhesions; lungs emphysematous; bronchial lining membrane thickened.

*Abdomen.*—The peritoneum contained a considerable quantity of fluid, also of pus, which was more especially in the pelvis; and bands of recent lymph matted the intestines together. The liver was rounded like a ball from the right lobe; the left lobe contracted, and firmly adherent to the diaphragm; the gall bladder filled with biliary calculi. Weight of liver, 36 oz.

Case 87.—Combined with pneumonia. Aged 85 years. Died in chronic ward, workhouse.

*Head.*—Surface of brain was of a yellow-green colour, from infiltration of pus in the pia mater; when the membrane was removed from the convolutions, they appeared natural; the lateral ventricles three drachms of clear fluid. Encephalon, 38¼ oz.

*Chest.*—Pleuritic adhesions on right side; emphysema of both lungs; and redness of bronchial lining membrane. The lower lobe of right lung was hepatized; in the third stage of pneumonia. The right lung weighed 27, the left 13½, oz.

*Abdomen.*—Liver soft, 47½ oz. In the left kidney were two cysts, each the size of a hazel nut; one was filled with matter resembling chalk and water.

### HYDROCEPHALUS. (11 MALES.)

Case 88.—Aged 2 months. Congenital hydrocephalus, convulsions. The child died one week after admission to the Infirmary.

The head rapidly increased in size after birth. The dimensions were as follow :—Circumference, $25\frac{1}{2}$ inches ; from ear to ear over vertex, 17 inches ; and antero-posterior, $18\frac{1}{2}$ inches. Three days after admission, it seemed in such a hopeless condition, that it was determined to try the effect of removing some of the fluid from the brain, and 28 oz. were drawn off by a small canula. The fluid was of a pink colour, not coagulable by heat, but a copious precipitate was obtained from nitrate of silver. During the operation the child became sick and vomited, and no more of the fluid was withdrawn. It did not appear to suffer in any other way, but continued as usual until a few hours before death. The infant was well nourished, and rather fat. Convulsions, which were slight at first, subsequently increased in intensity.

*Head.*—Between two and three pints of fluid in cerebral ventricles, which were so much dilated, that they formed a lining inside the skull about one inch thick. The brain weighed 28·4 oz.

*Chest.*—Organs healthy. The heart weighed $\frac{3}{4}$ oz. The right lung $1\frac{1}{2}$, and the left lung $1\frac{1}{4}$, oz.

*Abdomen.*—The organs natural. Weights as follow :—Liver, $6\frac{1}{4}$ oz. ; spleen, $\frac{1}{8}$ oz. ; stomach, $\frac{3}{4}$ oz. ; pancreas, $\frac{1}{4}$ oz. ; kidneys, $1\frac{1}{8}$ oz. ; renal capsules, $\frac{1}{4}$ oz. ; thymus, $\frac{1}{8}$ oz. The body weighed $12\frac{1}{2}$ lbs., and measured 25 inches.

Case 89.—Combined with tabes mesenterica. Aged 4 months. One week a patient in the Infirmary. When admitted, had diarrhœa.

*Head.*—About $\frac{3}{4}$ oz. of clear fluid was found in lateral ventricles. Encephalon weighed $23\frac{3}{4}$ oz.

*Chest.*—The lower lobes of both lungs were congested ; the right lung weighed $1\frac{5}{8}$, and the left $1\frac{1}{2}$, oz. ; the heart 1 oz.

*Abdomen.*—The mesenteric glands enlarged ; the intestines pale, but healthy. Weight of body, $12\frac{1}{2}$ lbs.

Case 90.—Aged 5 months. Ch. hydrocephalus of three months' duration. One month in the Infirmary. The head very much enlarged, being 20 inches round the forehead, and the same after death ; six days before which it was tapped between the right parietal and frontal bone, about 2 inches from median line, with the smallest trochar and canula, which were introduced about 1 inch, and 5 oz. of clear fluid, salt to the taste, drawn off. When tested with Sol. Argent. Nit., a dense white precipitate was observed. The skull unusually thin ; absorbed in some places.

*Head.*—About 16 oz. clear fluid escaped ; the brain formed a thin sheet, about $\frac{1}{2}$ inch thick. All the fluid was contained within the ventricles, which were greatly distended. Septum broken down. The specific gravity of the fluid was 1009 at 51° temp. Weight of brain, $30\frac{3}{4}$ oz.

Thoracic and abdominal organs natural.

Case 91.—Aged 9 months. Hydrocephalus, after measles. The child was a foundling, brought up by hand, considerably emaciated. It was under treatment nearly three weeks.

*Head.*—Brain soft; about 3 oz. of fluid in ventricles; weight, 28¼ oz.

Thoracic and abdominal organs natural.

Weight of the body, 8¼ lbs.; height, 25 inches.

Case 92.—Aged 15 months. Hydrocephalus. Symptoms of cerebral disease, succeeded by convulsions, were only observed four days previous to death.

*Head.*—A pale clot of fibrine in the longitudinal sinus, and a coagulum of blood in each lateral sinus, that in the left the palest. The ventricles were distended with fluid, some of which escaped when the skull-cap was removed. There was no softening of the central portion of the brain; weight, 32¾ oz.

*Chest.*—General bronchitis, and lobular pneumonia; weight of each lung, 3½ oz.

*Abdomen.*—The testicles had not descended; the other organs natural. Weight of body, 14⅛ lbs.

Case 93.—Combined with cachexy. Aged 18 months. Seventeen days a patient in the Infirmary; wasted, pale, had sores on face and neck, and was in a very low state on admission.

*Head.*—Half-an-ounce of fluid in lateral ventricles. The brain, which was pale, weighed 33½ oz.

*Chest.*—Congestive pneumonia; lower lobes of lungs in first stage of hepatization; each lung weighed 3 oz., and the heart 1 oz.

*Abdomen.*—Organs normal; intestines healthy.

Case 94.—Aged 20. Hydrocephalus, arachnitis. One week ill before admission; died a week afterwards. On admission, pupils dilated; in a comatose state; head hot; following day, pupils contracted; afterwards, again dilated; sometimes so violent as to render necessary his hands being secured.

*Head.*—Membranes and brain excessively congested; convolutions flattened; arachnoid dry, and a paste-like exudation on its surfaces, which made them slightly adherent, as if by a false membrane. Upwards of 2½ oz. of clear fluid in lateral ventricles, which were dilated. Brain firm and heavy; weight, 46 oz. The cerebellum not congested.

*Chest.*—Engorgement of lower lobe of left lung, which weighed 19, the right weighing 12, oz.

*Abdomen.*—Liver large; weight, 52½ oz. The other organs appeared normal. The body weighed 87 lbs., and measured 5·7 inches.

Case 95.—Aged 40 years. A coachman. Had been in a state of fever and destitution for two weeks. Admitted with low, muttering delirium. He died on the eighth day.

*Head.*—The lateral ventricles were distended with fluid, and there was cerebral softening of septum and fornix. Encephalon, 50¼ oz.

*Chest.*—Old pleuritic adhesions; slight pneumonia of right lung, which weighed 26¾, the left 19¼, oz.

*Abdomen.*—Viscera natural.

CASE 96.—Combined with pulmonary phthisis. A servant, aged 51 years. Admitted three days before death, in the last stage of disease.

*Head.*—Opacity of arachnoid; the lateral ventricles contained 6 ounces of clear fluid. Encephalon large, 59 oz.

*Chest.*—Pleuritic adhesions, especially on left side; numerous tuberculous cavities, and miliary tubercles in each lung, with intervening pneumonia. The right lung weighed 38½, the left 35½, oz.

*Abdomen.*—Kidneys large; the right weighed 6¾, the left 7½, oz.

CASE 97.—Aged 55 years. A stableman. Died suddenly on the day after admission. Had been subject to chronic cough.

*Head.*—There was fluid on surface of brain, and the ventricles were distended with it. The encephalon weighed 51¼ oz.

*Chest.*—Old pleuritic adhesions; lungs congested with blood; the right weighed 29, the left 25½, oz. Heart large and flabby, 19¼ oz.

*Abdomen.*—Liver large, 88 oz.

CASE 98.—A shoemaker, aged 63 years. Subject to chronic cough. Had been very feverish for three days before admission. He was emaciated; suffering from diarrhœa and sickness of stomach; and he died three weeks after admission.

*Head.*—When the skull was opened, a very large quantity of fluid escaped, and kept flowing from the spinal canal; the fluid was on the surface of the brain. Encephalon small; weight, 39½ oz.

*Chest.*—Old pleuritic adhesions; tubercles in both lungs, most in right, which weighed 33, the left 26½, oz.

*Abdomen.*—Spleen large, 20 oz.

### HYDROCEPHALUS. (8 FEMALES.)

CASE 99.—Aged 10 years. Admitted from girls' school with slight fever; delirium by night; head hot and aching; bowels constipated. These symptoms continued, with slight variations, for 13 or 14 days, when the child had sickness of stomach, which continued for a fortnight. The delirium increased; and a month after admission she raved and sang, especially at night. At the end of the fifth week the sickness decreased, the delirium ceased, and she appeared in an almost senseless state; she then began to improve; she picked her flesh, and became more observant than usual, but still she was silly. Her general health improved, and four months after admission she was able to sit up. The morning of her death, she sat up in bed, was suddenly seized with convulsions, and died in a few minutes.

*Head.*—Convolutions of brain flattened; the ventricles contained, by measure, four ounces of clear serum, in which were albumen, chloride of sodium; also acicular crystals having a peculiar odour.

*Chest.*—Organs natural.

*Abdomen.*—Liver a little soft at one spot, and congested with blood; weight, 35 oz.

CASE 100.—Combined with fatuity. Aged 66 years. Admitted from workhouse; generally confined to bed since admission; subject to occasional flushing of face; bowels torpid. In a state of stupor for several weeks before death.

*Head.*—Opacity of the arachnoid; about seven ounces of fluid in lateral ventricles. Weight of encephalon, 40 oz.

*Chest.*—General redness of lining of bronchial membrane, and slight emphysema. The aorta contained ossific plates near the heart, which weighed 9 oz.

*Abdomen.*—Liver dark-coloured, and contained several cysts, which were filled with chalky and purulent matter; weight, 40 oz.

CASE 101.—Combined with granular kidneys. Aged 71 years. Died in chronic ward, workhouse.

*Head.*—About three ounces of clear fluid in base of skull; some also in lateral ventricles; arteries of brain ossified. Encephalon, 45½ oz.

*Chest.*—Old pleuritic adhesions; muco-purulent matter in bronchial tubes, which were partly ossified.

*Abdomen.*—Both kidneys granular, wasted, and with small cysts on their surfaces; the right weighed 2½, the left 3, oz.

CASE 102.—Combined with bronchitis. Aged 73 years. Died in chronic ward, workhouse. Had an attack of influenza, from which she appeared to recover; but she fell into a state of stupor and died.

*Head.*—Three ounces of clear fluid in the lateral ventricles; the septum, fornix, etc., were rather soft. Encephalon, 48½ oz.

*Chest.*—General redness of the bronchial lining membrane. The lower two-thirds of the spine curved in the form S.

*Abdomen.*—Organs natural.

CASE 103.—Aged 74 years. Was admitted to surgical ward, having had a fall, and labouring under symptoms of concussion of brain. She latterly became hectic and childish, and was entirely confined to bed.

*Head.*—The lateral ventricles contained about four ounces of clear fluid; the brain very firm; weight, 44¼ oz.

*Chest.*—Lungs natural; the heart large, 12 oz.

*Abdomen.*—Organs natural.

Case 104.—Combined with chronic pneumonia. Aged 90 years. No history.

*Head.*—The lateral ventricles were dilated, and contained two ounces of clear fluid; the structure of brain natural; weight, 38½ oz.

*Chest.*—Slight pleuritic adhesion; each apex contained small earthy deposits, the size of a pea, with black condensed pulmonary structure around. The lower lobe of right lung rather soft and red, and in a state of chronic pneumonia. The right lung weighed 14, the left 9, oz.

*Abdomen.*—Organs small.

Case 105.—Combined with fatuity. Aged 90 years. Died in chronic ward, workhouse.

*Head.*—The lateral ventricles contained about 2½ oz. of fluid; brain unusually firm, not much fluid on surface. Encephalon, 37¼ oz.

*Chest.*—Organs healthy.

*Abdomen.*—Viscera healthy.

Case 106.—Combined with pneumonia, etc. Aged 90 years.

*Head.*—Opacity of arachnoid, and coats of arteries. Three or four ounces of fluid beneath membrane and in the ventricles. Encephalon weighed 39¼ oz.

*Chest.*—Pneumonia of lower lobe of right lung, and redness of the bronchial lining membrane of both lungs. The right weighed 22¼, the left 11, oz. There was backward curvature of dorsal vertebræ.

*Abdomen.*—Cysts in, and wasting of, the left kidney, which weighed 2¼ oz.; the right, 6¼ oz.

## ARTICLE IV.—*Case of Pericœcal Abscess simulating Strangulated Inguinal Hernia.* By PETER H. MACLAREN, M.D., Lasswade.

On the afternoon of February 21, 1861, I was called to John Fife, a collier, æt. 54, residing at Rosewell.

**History.** For the last two years he had been unable to work, suffering much from cough and weakness. Nine months ago, he says, "he had a rupture above his right groin, which, after some delay, was reduced by a medical man." Since then he continued in tolerable health, until a fortnight ago, when he noticed a painless, colourless swelling re-appear in the right inguinal region. On the tenth day, however, the tumour became larger and painful, especially on pressure. His abdomen felt tense, and the bowels remained obstinately costive, notwithstanding the frequent administration of castor oil. Sickness was present, but no vomiting. I found him lying in bed on his back, with the right thigh flexed; his countenance pale and anxious; breathing hurried; pulse about 90, small and wiry. The swelling occupied the right inguinal canal, was nearly a hen's egg in size, of a semi-elastic, or rather doughy, consistence, and a slight dusky red hue could be detected over the lower or pubic extremity. On applying the taxis, the size diminished slightly; but the length of time the swelling had been down, together with the reddened and painful state of the tumour, made me have little confidence in this plan of treatment.

Accordingly, after consulting with Dr Smith and Dr John Smith, it was deemed advisable to operate, which I proceeded to do in the usual manner. As the tumour did not pass beyond the external inguinal opening, I began the incision over the internal aperture; and after cutting through the skin and cellular tissue (which was dense and agglutinated), I touched the fibres of the external oblique tendon with the point of the knife, when a gush of fœtid pus arrested the proceedings. About six ounces escaped. In order to discover the seat of the abscess, and at the same time to give free vent to its contents, the opening was dilated upwards and outwards with a probe-pointed bistoury, after which I was enabled to pass the forefinger through the enlarged internal inguinal opening into the pelvic cavity.

The wound was left open, covered with tepid water dressing, and the patient replaced in bed, lying on his right side.

Ordered—Sol. Mur. Morph. ʒi., and brandy ʒii., every two hours.

Feb. 22.—Has slept four hours; feels easier; wound discharges small quantities of pus, and is free from pain; bowels unmoved. Pulse 90, full and soft.

Ordered—A water enema.

Feb. 23.—Enema acted very ineffectually, and was repeated at time of visit with good results. Has slept six hours, and eaten some panado.

Ordered—Pil. Col. et Hyosc. ii., and another in six hours, if necessary.

Feb. 24.—Pills have acted gently. Wound healthy. Abdomen soft and painless, even on pressure over cœcum.

Ordered—Beef-tea and half an ounce of brandy three times a day.

On the 26th, the wound was brought together by strips of plaster; and on the 17th March it had completely cicatrized, the patient going about as formerly.

**Remarks.**

The diagnosis of purulent collections deeply seated in muscular tissue, or bound down by dense fasciæ, is more dependent on the concurrent symptoms than on the unaided sense of touch, which in this instance appreciated a semi-elastic or doughy tumour. Taking into account the history, the local signs and general symptoms of the case, I had no hesitation in arriving at the conclusion that the swelling in the inguinal region was due to a strangulated omental hernia, or, perhaps, an enterocele whose sac was greatly distended with serum.

It will have been observed that vomiting, a symptom usually of so great importance, was wanting; but this did not incline me to alter my view of the case. For, considering that the patient was an old man of debilitated constitution, in consequence of which all the other symptoms had been very gradually developed, it was unnecessary, nay, dangerous, to wait for the manifestation of vomiting, more especially as its precursors, anorexia and nausea, already existed. Besides, in the clinical records of this disease, which are always more trustworthy guides than the typical specimens portrayed in systematic works, we meet with numerous examples where the diagnosis was substantiated, notwithstanding the absence of one or more of what may be called the orthodox symptoms. In *Hey's Observations on Hernia*, e.g., a case is related at page 112, in which "pain was not present in the tumour;" in another, at page 164, "the bowels remained open on the eighteenth day;" and at page 166, neither vomiting nor fæcal obstruction were noticed in a case on the third day of strangulation. While the symptoms of hernia were thus strikingly depicted, the salient points in the symptomatology of pericœcal abscess were altogether suppressed; and this deviation from the ordinary course is alone explicable, by looking to the peculiar nature of the exciting cause. In the literature of this disease, it is stated to arise chiefly by the extension of inflammatory action excited in the mucous membrane of the caput cœcum; and besides the general symptoms which may accompany many abdominal diseases, we are taught to look for "constant pain and tumefaction of the part." Their absence may be accounted for in this wise.

The chronic bronchitis under which this patient laboured, predisposed him to hernia; and we learn accordingly, that nine months ago a projection took place in the right inguinal region, most probably of the caput cæcum. This became incarcerated, and required surgical assistance for its reduction. Chronic inflammation of the pericœcal tissue, it would appear, was thus set up, terminating, as it usually does, in suppuration. The previous displacement, by producing great laxity of the parts, would account for the painless formation of matter so long as it remained in the abdomen, and would at the same time determine the seat of pointing, so unusual in the history of cases of pericœcal abscess. Pain supervened, when the gradually increasing pus met with the obstinate barrier at the external opening of the inguinal canal; and the subsequent pressure on the head of the colon, attended perhaps with subacute inflammation, would cause the fœcal obstruction.

Had the light of a true diagnosis guided the treatment, it would not have differed from that adopted. The free incision at once relieved the pain and symptomatic fever, and obviated the risks of a cæcal or peritoneal perforation—terminations by no means uncommon in pericœcal abscess.

The successful termination of the case illustrates and corroborates two important principles in surgery,—viz., when a chronic abscess becomes acutely inflamed, a speedy opening is demanded; when a painful abdominal protrusion, evidently occasioning severe constitutional symptoms, does not yield to the taxis, operate immediately.

The chest affection alluded to in the first part of this report was chronic bronchitis, complicated with emphysema and dilated heart. Towards the end of March, the patient was seized with acute bronchitis, which greatly obstructed the circulation, and gave rise to general anasarca; after a few days' illness he died. On examining the body 36 hours after death, I made the following observations:—The cicatrix in the groin was firmly consolidated. On opening the abdomen, the omentum was dragged entirely to the right side, and its lower margin was fixed to the anterior abdominal wall. The adhesion, four inches long at its inner extremity, commenced about an inch above the internal inguinal opening, and ran upwards and outwards in a line parallel to Poupart's ligament. It was impossible to separate the omentum from the abdominal wall without tearing.

The caput cæcum lay close to the outer margin of the ring, and the appendix vermiformis coursed round the upper border in so near proximity to the opening, that had its division been necessitated by stricture, the gut would have been in great danger of being wounded. The connective tissue which bound these structures to their abnormal situations was soft, and easily broken up by the finger.

The internal inguinal ring was considerably dilated. No traces of pus were discovered.

## ARTICLE V.—*On Partial and Complete Loss of Sight in Diabetes; with a Notice of Two Cases of Diabetic Cataract.* By J. WARBURTON BEGBIE, M.D., Physician to the Royal Infirmary.

AMONG the frequent, though by no means invariable, symptoms of advanced diabetes may be reckoned dimness of vision, amounting in some instances to complete loss of sight. By several of the more recent writers on this affection, the morbid phenomenon in question has been particularly noticed; while, as is now well known, a careful inquiry has determined its dependence, in several examples, on a special form of disease within the eye. Why failure of sight should occur in some cases of diabetes, and not in others which have reached the same stage, and why the experience of different observers on this point should vary very considerably, are questions which undoubtedly merit a careful consideration.[1] It is not, however, to this particular inquiry that I now desire to direct attention, but briefly to the causes upon which dimness of vision or more decided loss of sight, when it does occur in diabetes, depends. One cause of defective vision in diabetes, and the first I shall notice, is cataract. This association had been at least casually observed by various writers[2] before the able and satisfactory elucidation of the subject by Mr France, in the *Ophthalmic Hospital Reports* for January 1859, and more recently in *Guy's Hospital Reports* for 1860. Among the former, Dr Mackenzie,[3] the distinguished oculist of Glasgow, and Dr Matthews Duncan,[4] of Edinburgh, had specially observed certain instances.[5] Mr France has himself seen four cases, and from different sources has collected others, so as to raise the number to about twenty. To this list I am now able to add two cases which have recently fallen under my observation in the Hospital, through the kindness of my colleague, Mr Walker; both patients having, in the first instance, applied at the ophthalmic wards for advice in regard to their failure of sight. It is unnecessary to furnish minute details of these cases; the following summary of facts in each, from the more extended notes of my clinical clerk, Mr Wilson Moore, will suffice. It is somewhat remarkable that both cases fell under observation at the same time:—

CASE 1.—Elizabeth R——, æt. 32, married, admitted February 1861; mother of two children. A maternal aunt died of diabetes. For nearly two years this patient has suffered from the same complaint. About three months after she first noticed the occurrence of excessive thirst, and the passage of an unusual amount of urine, her sight began to fail; it has gradually become more and more impaired, and for some months has been so bad that she has required to be led about. During last summer she suffered much from the occurrence of obstinate boils on different parts of the body. Latterly she has had cough, with purulent expectoration and frequent attacks of diarrhœa.

*On admission*, she presents the marked aspect of a diabetic patient

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[1] Dr Watt, Dr Craigie, Dr Prout, and Dr Watson, among British writers, have noticed dimness of vision as a symptom of diabetes. In France, two able writers have done so, MM. Bouchardat and Mialhe. On the other hand, M. Contour, whose experience of the disease cannot have been very limited, has never observed enfeebled sight (affaiblissement de la vue) among its attendant phenomena.

[2] See *Valleix Guide du Médecin Praticien*. Tome 3, page 552. 1850.

[3] *Diseases of the Eye*, page 747, under the head of "Remote and Predisposing Causes of Cataract." 1854.

[4] His translation of *Braun on Puerperal Convulsions*, foot-note, page 15. 1857.

[5] That, as Mr France has conjectured, several other instances of diabetic cataract have been observed, cannot admit of any doubt. Lately, Dr Cadenhead, of Aberdeen, informed me that he had seen, at all events, three such. Professor A. Von Graefe, of Berlin, regards their occurrence as far from rare.

—greatly emaciated; skin very dry; much hair of head has fallen, it is now very thin; has double lenticular cataract, evidently symmetrically developed, and, from their colour and bulk, of soft consistence. The amount of urine passed in 24 hours varies from 180 to 220 ounces; of density 1·036, and highly saccharine. Physical signs of tubercular deposit exist in the apices of both lungs. The chest affection made rapid progress; signs of extensive softening and excavation in the pulmonary substance on the right side became developed; and the diarrhœa resisted all endeavours to check it. This poor woman died at the close of March. An examination of the body was made within 30 hours after death. Putrefaction had advanced very rapidly; so that a careful examination of the eyes, which Mr Walker had proposed to make, was defeated. The lungs were the seat of extensive tubercular deposition; several cavities existed in the right. The pancreas was small.

Case 2.—The subject of this observation is still under my care in the Infirmary.

Jane W——, æt. 37, married, admitted March 1861. Has had four children. Has been suffering from diabetes for nearly eight months. During the last three months her sight has rapidly failed; that of the right eye became earliest affected. For a few weeks she observed that she could see best during the dusk; lately, however, she has lost sight entirely.

*On admission*, is thin and emaciated, with dry skin, constipated bowels, and much thirst. Urine has a density of 1·038 to 1·040; amount passed has not exceeded, on any occasion, 200 ounces in the 24 hours. Trommer's, the Bismuth, and Liquor Potassæ tests show the presence of sugar in very characteristic degree. Has double lenticular soft cataract, precisely similar in appearance to that of the former patient.

Under treatment this patient has very considerably improved. Her strength has increased, and she has gained weight. The amount of urine is diminished to 70 ounces, and has been as low as 55; the density is now uniformly 1·031. Her thirst is easily controlled. Animal food, gluten bread, Vichy water, a moderate allowance of sugar, and London porter, have constituted the dietary. Sensible benefit has resulted from the employment of the combined tinctures of the Sesqui Chloride of Iron and Nux Vomica. By doses of 20 drops of each, administered thrice daily, her thirst has been entirely removed.

In both of these cases the development of the cataracts occurred somewhat earlier in the progress of the general disease than has been observed in other instances; still, there can be no hesitation in concluding that the diminution or entire loss of sight dependent on opacity of the crystalline lens, when it does occur in diabetes, is a phenomenon of its advanced stage. Mr France has pointed out—to which the cases now briefly related form no exception—that in every example the cataracts have been symmetrically developed on both sides, and have also been of the soft variety. For a further interesting and accurate account of the eye disease, I must refer to Mr France's last communication on the subject.[1]

The importance of the connection subsisting between cataract and diabetes is greatly increased by the results of certain experiments performed by an American physician, Dr Weir Mitchell,[2] as well as those more recently instituted by Dr B. Richardson, of London.[3] Dr Mitchell determined that in the frog "the formation of a peculiar variety of cataract is one of the most curious and striking symptoms attendant upon the sugar poisoning;" while the investigations of Dr Mitchell and Dr Richardson have demonstrated that, in the instance of several of the lower animals, when sugar, in one way or other, in considerable amount is introduced into the system, the formation of lenticular cataract is the result.

But it is very apparent that all instances of defective vision in diabetes are not dependent on the formation of cataract. There is a diabetic amaurosis as well as a diabetic cataract. Without depreciating the difficulty of determining between these two affections in their early stages, even by a very careful examination of the eye—a difficulty which the introduction of the ophthalmoscope has greatly removed—there are particulars in the instances of diabetic amaurosis which have fallen under my own observation, serving to distinguish it from those cases in which the failure of sight is due to the morbid condition of the lens:—1. In the former, the dimness of vision has occurred at an earlier stage of the disease. 2. It has been accompanied by pain, or at least uneasiness, in the eyes; or by peculiar noises in the ears; or by general headache. 3. The failure of sight early noticed continued to exist, making very gradual advance; and in some instances, after being stationary for a time, lessened. I am disposed to think that these peculiarities, taken in connection with the careful inspection of the eyes themselves, will be found to establish the diagnosis; for, in the case of cataract,—1, The failure of sight is not an early phenomenon of the diabetic state; 2, Impaired vision is not accompanied by ocular pain, and still less by pain in the head generally; 3, Instead of making slow progress, the sight, once affected, never improves, but becomes rapidly worse; and, when so, the cataractous appearance will assuredly be marked.

In one case of diabetes which fell under my care about five years ago, and which terminated fatally by coma, the condition of enfeebled sight had existed for many months, without the least appearance of cataract; and in that instance, as well as another, seen since, severe headache and tinnitus aurium were not unfrequent symptoms. In such instances the nervous system generally, must be held as being injuriously affected through the altered condition of the blood. Precisely similar symptoms occur in the progress of renal disease.

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[1] "Additional Notes on Diabetic Cataract."—*Guy's Hospital Reports.* Third Series. Vol. vi.

[2] *The American Journal of the Medical Sciences.* January 1860. "Production of Cataract in Frogs by the Administration of Sugar."

[3] *Journal de Physiologie* for July 1860.

It is not necessary, I think, to ascribe the failure of sight, as M. Mialhe does, to a milky state of the blood (*latescence du Sang*), caused by the presence of what he styles his modified albumen, altering the transparency of the humours of the eye;[1] for, firstly, there is no distinct proof of the existence of such a substance in the blood of diabetes; and, secondly, the phenomenon in question is really best explained by the operation of the blood—altered, impoverished, or poisoned—on the retina itself. In the so-called Diabetes Insipidus, a failure of sight, if not of precisely the same nature, nevertheless closely allied to it, occurs; also in anæmia and chlorosis, and in various other affections.

Failure of sight, then, occurring in diabetes is not necessarily to be ascribed to the existence of cataract, but may be truly of the nature of amaurosis. I have thought it expedient to direct attention to this point, specially at the present time, when, through the interesting observations of Mr France, and the important experiments of Dr Mitchell and Dr Richardson, the subject of diabetic blindness is being discussed.

# Part Second.

## REVIEWS.

*Abstracts "of Returns of Information on the Laws of Quarantine," presented to the Board of Trade by the Quarantine Committee of the National Association for the Promotion of Social Science.* Printed by order of the House of Commons.

The grievous detentions, and oftentimes irreparable injuries, which befell the traveller, not many years ago, in his migrations from one country to another, are still impressed upon our minds with sufficient distinctness to make us appreciate any and all efforts for their permanent abolition. It was not by any means, even a few years ago, an easy matter for a traveller on the Continent to state distinctly where he would be at a fixed date, that he might receive his letters, meet a friend, or transact his business. He was made to perform quarantine upon the most meagre *suspicion* of his having come from a country infected with disease of a *contagious* character; and not unfrequently was incarcerated for thirty or forty days, subjected to much ill-treatment, and made to undergo a series of mummeries under the name of purifying fumigations for the destruction of certain *fomites*, which had their existence probably only in the imaginative brain of the functionary who exercised an arbitrary, and generally lucrative, authority in the treatment of all newcomers. Quarantine is one of the effete principles of our age, and is undergoing a rapid elimination at the hands of the comparatively recent, but withal powerful, emunctories—Sanitary and Social Science. The light of physical science is penetrating the dark and superstitious dogmas of bygone times, uprooting, in its onward march, the tyranny of ignorance. Quarantine, at all events in its most obnoxious forms, is rapidly falling into desuetude; and we may hope that the time is not far distant when it will disappear altogether—probably in company with that other "middle wall of partition," and equally inefficacious absurdity—the passport. Let it not be supposed that we are speaking lightly of a judicious and careful investigation into the condition of vessels arriving from a country where an epidemic of disease is *known* to prevail; nor of a careful and enlightened treatment of such sporadic cases of malignant disease as may exist amongst the crew or passengers when they arrive in port. Far from this; our animadversions extend only to those—happily fast waning—homicidal practices of segregation, fumigation, and other barbarous eccentricities which we inherit from our filthy ancestors of the superstitious ages. Importing vines is not, of itself, growing grapes. These vines must be accommodated with a hot-house, and such physical indulgences as they had previously been accustomed to in their autochthonic soil; then they will luxuriate and multiply—otherwise they will die out. And, in like manner, in order that a few cases of imported disease may give the impulse to a wide-spread epidemic, they must encounter those congenial hot-beds which it is the imperative duty of sanitary and social science to eradicate. Let us teach the public so to burnish itself that the breath of contagion will no longer lie upon its surface, but will be cast off by it into the surrounding and *ever changing* air to be dissolved and nullified.

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[1] *Chimie Appliquée a la Physiologie et a la Thérapeutique*, page 164.

The movement initiated by the *Quarantine Committee of the National Association for the Promotion of Social Science*, tends, if we apprehend it rightly, in this direction. The *International Quarantine Conference*, convened in Paris in 1850, made the first breach in the old code of laws; but the opportunity was not improved. Few of the nations who sent delegates to that conference, gave attention to the results of their deliberations. The Americans held a *Quarantine Convention* at Philadelphia in 1857, and remodelled their laws according to its suggestion. In 1859, the Social Science Association drew up a form of inquiry into the practice and results of quarantine all over the world, a copy of which was distributed, by the Secretaries of State for Foreign Affairs and for the Colonies, to the governors of British Colonies and to all British consuls. The pamphlet we have before us contains some very valuable information collated from the returns made by the governors and consuls. From a careful examination of these replies, we are led to the following conclusions:—1*st.* That in a few countries quarantine is still imposed in a rigorous and vexatious manner. 2*d.* That the number of diseases comprehended by the quarantine laws of former times, and the number of days of detention, varying from 30 to 80, are both reduced; the latter ranging generally from 4 to 15. 3*d.* That in many countries quarantine is spoken of as *a nominal law* or *a dead letter*, and appears to be very rarely, if ever, enforced. 4*th.* That the severity of quarantine is inversely as the development of sanitary science in a country. It is beyond our limits to enter into the details of this Parliamentary Abstract; and we can only add, in conclusion, that it reflects great credit upon those members of the *Social Science Association*, all of them men of mark, who have devoted their energies so emphatically and generously to the well-being of their fellow-creatures.

## *Transactions of the Obstetrical Society of London.* Vol. II., for 1860. London, 1861.

It is seldom that a scientific association is observed to attain such early maturity as the Obstetrical Society of London has done. Its list of officers, of honorary and of ordinary members, is very imposing, and really great in numbers and in respectability; but the best evidence of its life and vigour is its yearly publishing a handsome volume of Transactions. The book cannot be produced without the zealous co-operation of many heads; and whatever be its intrinsic merits, its very publication shows good-will and good endeavour. We do not need to look far for the origin of this Society. The middle of the century has seen an immense development of professional activity in the literary and practical departments of obstetricy; many questions have been popular subjects of discussion, and of these many remain unsettled. In London there is necessarily a larger congregation of obstetricians than anywhere else in the world; it has been the arena of many disputations; it is the seat of numerous medical schools; and in possessing an Obstetrical Society, it only follows the example of its sister metropolitan cities of Ireland and Scotland. But it has already done much to make up for lost time by the rapid completion of its very perfect organization, and by the publication of two very admirable volumes of Transactions.

This second volume is opened by an address to the Society on the occasion of its first anniversary, by its late lamented President, Dr Rigby. In it he gives a brief memoir of the late eminent Dr Lever;

and, in the next volume, the talented new President, Dr Tyler Smith, will have to eulogize his predecessor, Dr Rigby. The President's address is followed by thirty-four papers. Of these, six relate to various diseases of children, six to diseases of women, and twenty-two to midwifery. Dr Hall Davis records a very interesting case, in which he enucleated and removed a large fibrous tumour of the uterus. Mr Marley writes a paper, in which he would wish to persuade us that inunction of belladonna will arrest or prevent mammary abscess. Dr Branton Hicks writes elaborately on concealed internal uterine hæmorrhage. Mr Hardey is ingenious in his paper on special position and the obstetric binder as aids in impeded parturition; but we fear Deventer is not susceptible of resuscitation in any form, however modified. Dr Routh writes a paper on hæmorrhage treated by injection or the curette, or by both; and fails to inspire us with any feeling but a desire for increased wisdom in devising and caution in performing. Of all the writers in the book, old Dr Granville is perhaps the most interesting and instructive: his paper is full of observation and thought on his extensive experience among the London poor. Dr Tyler Smith's article on William Hunter's views of the causation of retroversion of the gravid uterus is interesting, but not convincing. Although he has shaken Hunter's position, he has certainly failed to establish the influence of previous retroversion of the unimpregnated organ; and when we reflect on the frequency of retroversion in the empty uteri of breeding women, we shall, in view of the great rarity of retroversion of the gravid uterus, require a deal of closely-fitting evidence to prove that the latter is the result of the former. When we speak of retroversion of the gravid uterus being rare, we refer to its characteristic form when it is locked in the pelvis; for degrees of retroversion in the early months are not uncommon in women who have had their empty uteri retroverted, and in women who have not. We lately observed a little woman whose uterus was not retroverted only, but positively, in position, inverted, the os being vertically above the fundus and looking directly upwards, who, further, had a contracted pelvis, the sacral promontory being unnaturally prominent. This little woman became pregnant, and never had a bad symptom till after delivery, when retroversion returned.

We have omitted to mention many of the papers in the volume; but we can bestow a moderate meed of praise to most of them. There is room for much improvement. We say it without any desire to disparage.

*Hints on Insanity.* By JOHN MILLAR, L.R.C.P., Medical Superintendent, Bethnal House Asylum, London. London, 1861.

THIS little book, both in its style and getting up, reminds one of Pickering's choice series of Small Books on Great Subjects. It is evidently written by one well acquainted with insanity in all its forms, who, drawing on his experience, has here given us the results of his study of the disease in a condensed form. Few subjects are so puzzling to the practitioner; and we all know the difficulty of expressing concisely, in the form of certificate (so lately and so unnecessarily extended to Scotland), the grounds of our opinion as to the insanity of a patient. The standard works of Pritchard, Conolly, Winslow, or Noble, it may not be in our power to consult; and, besides, it is not always an easy matter to find the information we are urgently seeking in a voluminous work on the subject. Mr Millar has attempted to supply this desideratum by giving a succinct description of the leading forms of insanity; and, in addition (and for this we specially commend the work), has appended excellent advice as to the filling up the various forms of certificate, illustrating his remarks by quotations from actual certificates in numerous cases; and pointing out, by examples, the mistakes arising from faulty description and the vague use of words.

# Part Third.

## PERISCOPE.

### MEDICINE.

#### ON HÆMATURIA. BY PROFESSOR OPPOLZER, OF VIENNA.

According to Oppolzer, it is often difficult to determine, in cases of hæmaturia, whether the blood comes from the bladder or the kidneys, as, even in the case of the recognition by the microscope of exudation casts presenting the form of the tubules of Bellini, it is not safe to decide absolutely on the existence of a renal affection, as not unfrequently simple blood clots may assume the same form. Accordingly, we can only assume that an affection of the kidney is the cause of the hæmaturia when the tubecasts contain on their surface but a few blood globules. The rapidity with which the sediment takes place from the urine cannot be considered as characteristic of hæmorrhage from the bladder, as the duration of the intermixture of the urine with the blood is not known. In order to arrive at a satisfactory diagnosis, Oppolzer considers it essential to make a complete examination of the urine, which in kidney disease is characterized by a diminution of the urea, of the uric acid, and of the colouring matter (particularly of the urophœin of Heller), by an increase of the indigo, and almost invariably by the presence of albumen. On the other hand, if symptoms of a vesical affection are observed, there is a probability that there is disease of the bladder, especially if the urine, when emitted, is found to be decomposed. The causes of hæmorrhage from the bladder are numerous: stagnation of the urine, spasm of the bladder, paralysis, injuries of the bladder and of the adjoining organs by foreign bodies, urinary calculi, cancer; various medicines (such as cantharides), and certain constitutional conditions (as scurvy), may also give rise to hæmaturia. This condition may occur spontaneously, as among the inhabitants of the Isles of France and Bourbon; or it may be occasioned, as in Egypt, by the hæmatobion, which also occasionally determines the formation of stone in the bladder. In all these cases the symptoms must decide what has been the special cause of the hæmaturia. Bleeding from the kidneys occurs in Bright's disease and nephritis; it accompanies renal calculi, cancer and tubercle of the kidneys; and is also observed in cases of disease of the heart, of compression and obturation of the renal veins, of scurvy, and of strongylus gigas. The treatment of hæmaturia consists in the treatment of the disease by which it is occasioned.—(*Wien. Allg. Med. Zeitung*, 1860, 2–4.)

## MATERIA MEDICA.

### CONCLUSIONS REGARDING THE EFFECTS OF ALCOHOL. BY MM. LALLEMAND, PERRIN, AND DUROY.

1st. Alcohol is not an aliment.

2d. Alcohol exerts a special modifying influence upon the nervous system. In small doses it acts by exciting, in large doses by stupefying.

3d. Alcohol is neither transformed nor destroyed within the organism.

4th. Alcohol accumulates, by a sort of elective affinity in the brain and in the liver.

5th. Alcohol is eliminated from the organism completely and unchanged. The channels of elimination are the lungs, the skin, and especially the kidneys.

6th. Alcohol has a direct pathogenetic influence in the development of various functional disturbances and organic alterations of the brain, the liver, and the kidneys.

7th. Spirituous liquors owe to the alcohol they contain their common properties, and the speciality of their effects.

The moderate use of simple fermented liquors is generally useful, and presents no inconveniences.

The use of liquors fermented and distilled is often prejudicial; it ought always to be very limited, and should only be tolerated under exceptional circumstances.—*Du Rôle de l'Alcool et des Anesthésiques dans l'organisme.* Paris, 1860.

### ACTION OF CHLOROFORM ON THE BLOOD—PROBABLE CAUSES OF ITS FATAL EFFECTS WHEN INHALED AS AN ANÆSTHETIC. BY CHARLES T. JACKSON, M.D.

Six years ago I published, in the *Boston Medical and Surgical Journal*, a case in which sudden death was produced in a healthy young woman by inhalation of pure chloroform, given preparatory to extracting a tooth. The case was investigated by a coroner's jury, a *post-mortem* examination being made by Dr Stedman, Dr F. S. Ainsworth, and myself. The blood taken from the right side of the heart was analysed, and was found to contain formic acid in considerable quantities, but no chloroform in an undecomposed state. Microscopic examination of the blood, by Dr J. Bacon, showed that the blood-globules were withered up in a very remarkable manner. Chlorine was also found to be a component of the blood. It was also observed that this blood did not coagulate, nor did the blood-globules subside, but the whole remained a solution, the blood having a cranberry-red colour, like red ink.

I have now a phial of this blood before me, it having been kept in my office, exposed to temperatures from the freezing point to above 80° for more than six years, and yet it has not decomposed, nor has a single blood-globule settled to the bottom of the phial, nor has the colour changed in the least.

Attention is now now called to these remarkable phonomena, which appear to throw some light on the chemical action which chloroform exerts on the blood. As I view the matter, I consider the chemical action on the blood by inhaled chloroform to be this:—Chloroform consists of one equivalent of formyle and three of chlorine. Formic acid consists of one equivalent of formyle and three of oxygen. When chloroform is inhaled into the lungs, the oxygen is abstracted from the blood, and combining with the formyle makes formic acid, while chlorine combines with the blood as a substitute for oxygen. Thus a portion of the blood becomes chemically changed, disorganized, and rendered unfit for its vital functions. Then, if that portion of the blood contained in the heart and large vessels, which we may style the immediate working blood of those organs, is vitiated, so as no longer to be an appropriate stimulus to the most vital organs, sudden death is most likely to take place through cessation of their action. Our only surprise should be that death does not more frequently follow from inhalation of this dangerous anæsthetic agent; for the decomposition I have described undoubtedly always takes place to a certain extent and to a sufficient degree, to deoxidize a considerable portion of the blood, and to charge it with chlorine and formic acid.

It is well known, that deaths more frequently take place in cases where chloroform is administered in minor surgical operations, or in cases where there is no loss of blood, than in larger and bloody operations.

This I think admits of an explanation in the fact, that where there is large hæmorrhage the vitiated blood, or a portion of it, is removed, and is replaced in the vital organs by blood coming from other parts of the body, where it has been but little acted upon by the chlorine,—a new working blood being drawn into the large circulating organs, which are thus enabled to continue their proper action, and to supply the brain with its appropriate stimulus. This hypothesis appears to me to cover the cases thus far reported, and I offer it for the consideration of physiologists.

The great disadvantage under which chloroformization labours, is the introduction of chlorine, as such, into the composition of the blood. This we know to be destructive of the blood-globules, and an actual poison in the system.

We naturally inquire how this vitiated blood is got rid of, for it evidently never can be re-organized in the circulation. It is undoubtedly thrown off as so much effete matter, by the secernent and excretory organs, and chiefly by the kidneys. Hence, in a large majority of cases, the patients recover with but little damage to their health, though there is always a degree of prostration in most, if not all cases of chloroformization.

It is obvious that we may much diminish the danger in employing this agent, by mixing with it a large proportion of pure ether, say at least three-fourths of its bulk. By this means we not only dilute the dangerous with a perfectly safe anæsthetic agent, but add the stimulus of ether to overcome the deadly, depressing effects of chloroform. The object in allowing any addition of chloroform to ether, was to obtain a less bulky and more powerful agent than pure ether alone, and to afford greater facility in carrying an anæsthetic agent into the field of battle. It was therefore recommended by me, and was used in the French and Sardinian armies of the Crimea, with great success and safety, while chloroform, which was employed by the English surgeons, produced many fatal accidents. Still, in cities and at home, or in hospitals, I should always prefer pure washed ether, as it is known to be a safe and sure anæsthetic agent, though it is somewhat bulky. However, from my own experience and observation, I must say I never have known any fatal or even inconvenient effect to result from the employment of the mixture of chloroform and ether in the proportions I have named.

In Austria, by orders of the Government, one-ninth of the bulk of chloroform is added to ether, and this is employed in the Austrian hospitals and armies. Its introduction was effected by Dr Weiger, of Vienna, and it is stated that no fatal accidents have thus far arisen from its use. It is obvious that the dangers from chloroform are diminished in the direct proportion to its dilution with ether. The surgeon is more able to guard his patient from an over-dose, and the comparative lightness of ether, when compared with chloroform, together with the stimulating nature of ether, allows the more ready exhalation of the vapour, and prevents nervous depression from going too far.

As to the impurities of chloroform of commerce, I am aware that it is liable to contain fusel oil and the products arising from decomposition of that poisonous fluid, also free chlorhydric acid, and sometimes sulphurous acid, are present in badly-prepared chloroform. Such chloroform we should at once reject, as being wholly unfit for inhalation, either alone or in any mixture.

Some chloroform, from causes not yet fully known, readily undergoes spontaneous decomposition, with the disengagement of pungent fumes of chlorhydric acid gas. I have two samples now on hand which have thus undergone decomposition. This chloroform was made according to directions contained in the *United States Dispensatory*, by one of our most skilful pharmaceutists. When freshly prepared, it appeared to be of good quality, but in a few months underwent decomposition, as above stated, and without having been exposed to direct sunlight.

Chloric ether, so called formerly, is nothing but an uncertain mixture of chloroform and alcohol. When administered on a wet sponge, the alcohol is retained by the water, and only the chloroform is inhaled by the patient. The first samples introduced here were merely the unwashed first runnings of the chloroform still. Subsequently, the article was made more uniform in strength, by dissolving one measure of chloroform in three measures of 95 per cent. alcohol. This preparation is now but little used as an anæsthetic, several deaths having resulted from its inhalation,—one at Lynn, and another at the Chelsea Marine Hospital, will be remembered by physicians in this vicinity.

It is well known that there have been a large number of deaths caused by the inhalation of chloroform, while it is believed here that there are no well-ascertained deaths resulting from the use of ether. That deaths occur in grave surgical operations, many hours or days after an operation effected under etherization, is no evidence that the ether caused the death, or had anything to do with it; and yet we see such cases tabulated and presented to the public as proofs of death from etherization. Such reports should not be adopted without careful analysis and discrimination of the real facts concerned.

Lest some persons may suppose that the discoverer of etherization is jealous of any substitute for ether, let me say that I was the first person in this country who adopted Waldie and Simpson's substitute for ether, and that I not only made the first pure chloroform, and distributed it gratuitously to physicians, but also induced a manufacturer to procure one of the largest stills, and instructed him in the processes of the manufacture and purification of chloroform. I also made public trials of the effects of this preparation, administered it to our late chief surgeon, Dr J. C. Warren, and aided in every way the introduction and use of this new agent. Experience has at length satisfactorily proved, that chloroform is a dangerous substitute for ether. I feel bound, therefore, to aid in calling upon the medical public to return to their original anæsthetic agent, pure washed ether.

*Tests for Chloroform.*—The following are the approved tests for chloroform:—

1st. For *Alcohol.*—Take its specific gravity at 60° Fahr.; if it is lower than 1·496, alcohol or ether may be present. To test for alcohol, take a graduated glass test-tube, put in a given measure of the chloroform, and add water. Then shake up quickly, stop the tube, and set it in a cold place until the chloroform has entirely subsided; observe how many divisions the chloroform has contracted to, and thus measure the proportion of alcohol that has been dissolved by the water.

2d. For *Aldehyde.*—Hydrated oxide of silver is reduced by it to the metallic state, without heating. A solution of caustic potash turns the aldehydic chloroform brown.

3d. *Formic acid* reduces nitrate of silver to the metallic state, when chloroform containing it is mingled with a solution of the nitrate of silver and is heated.

4th. *Chlorhydric or muriatic acid* is detected, first, by the acrid and pungent fumes of the gas; secondly, by the formation of a dense white cloud, when a feather dipped in aqua ammonia is brought over the impure chloroform; thirdly, by the formation of a white precipitate of chloride of silver, when nitrate of silver solution is added. Litmus paper, wet with pure water, is instantly reddened when held over the mouth of a bottle containing chloroform, giving out chlorohydric acid gas.

5th. *Hypochlorous acid* may be detected by its odour, and by its first reddening litmus paper and then partially bleaching it.

6th. No ready and satisfactory tests for the presence of *methyle* are yet known, but its effects on inhalation are known to be, a peculiar throbbing headache, and rapid prostration of the vital powers. Dr Letheby states, that these effects may be observed, on merely smelling of a chloroform containing these compounds, the headache coming on in a short time.

7th. *Sulphurous acid* may be detected by its odour, being the same as that of a burning sulphur match, and by its bleaching litmus paper.

8th. *Hydrochloric ether* may be washed out from chloroform by water, and be obtained by distillation of the aqueous mixture.

Dr Letheby states, that chloroform should be perfectly colourless and free from opacity; that its specific gravity should be near 1·496. It should neither redden nor bleach litmus paper. It should not become opaque when dropped into water. It should not become cloudy and white when nitrate of silver solution is added to it. It should not coagulate white of egg; and, we may add, it should not turn brown when concentrated sulphuric acid is mingled with it, nor should it be made brown by the action of a strong solution of hydrate of potassa. It should leave no odour in a sheet of blotting-paper from which it is evaporated.

By these tests the physician and surgeon who employ chloroform as an anæsthetic, may know whether he has a pure or an impure article to operate with.—*Boston Medical and Surgical Journal*, March 1861.

# Part Fourth.

## MEDICAL NEWS.

### MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XL., 1860–61. MEETING VII.

*Wednesday*, 1*st May* 1861.—BENJAMIN BELL, Esq., President of the Society, in the Chair.

#### I. SCIRRHUS OF MAMMA.

*Mr Spence* showed a specimen of scirrhus of the mamma. The disease had not begun in the usual situation, near the mammilla, but near the axillary border of the gland. The tumour was of great density, and there was much retraction of the integument. Some glands in the axilla were enlarged, and were removed at the same time. When cut into, they did not present the usual characters of cancer; still their removal had seemed advisable.

### II. OCCLUSION OF UTERINE CAVITY—ABSCESS OF UTERUS—CANCER.

*Dr Matthews Duncan* exhibited a beautiful preparation of a uterus, procured from a woman who died of cancer of the neck of the organ in the usual way. It was peculiar and interesting, as it exhibited a complete closure of the cavity proper of the womb, and the change of this cavity into an abscess, of the size and shape of an orange. The lining membrane of the uterus was changed into a pyogenic structure, so far as the epithelial particles were concerned. The matter collected in the uterus was laudable pus.

Had this old woman not had the uterine cervix closed at its upper part, as was the case, she would have been a sufferer from the uterine leucorrhœa of old women, which Dr Duncan had described in the *Edinburgh Medical Journal* for March 1860.

### III. MORBUS COXARIUS.

*Mr Edwards* showed the hip-joint of a boy who had suffered from morbus coxarius for three years. The sufferings of the patient had been more severe than Mr Edwards had ever before witnessed in this disease, the slightest movement of the limb giving rise to painful spasms. The limb was placed in the American splint, which Mr Edwards had described at a former meeting of the Society (see present volume of *Journal*, p. 517). The extension kept up by this instrument afforded great relief. The patient died from ascites and disease of the liver. On *post-mortem* examination, a small sequestrum was found to project backwards from the head of the bone into the soft parts; it was possible that the irritation produced by this had been the source of the unusual suffering, just as great suffering is often produced in ordinary fracture by a small spicula of bone.

### IV. DISEASE OF ANKLE-JOINT.

*Mr Edwards* showed a foot which he had removed on account of advanced disease of the ankle-joint. He thought that removal at the joint would do no credit to the operation either of Syme or Perigoff, and he had accordingly amputated at the lower part of the leg.

### V. FRACTURE OF THE RADIUS.

*Mr Edwards* showed the bones of the forearm in a case of fracture of the radius. The fracture was situated about an inch above the lower end of the bone, and the preparation showed well the peculiar distortion which resulted from the muscular spasm.

### VI. TUBERCLE OF THE TESTICLE.

*Dr P. H. Watson* showed a specimen of tubercular disease of the testicle, or rather of the epididymis, from a young subject.

### VII. CASE OF PERICŒCAL ABSCESS.

*Dr P. H. Maclaren* read a case of pericœcal abscess, which simulated strangulated inguinal hernia. (This case will be found at p. 1102 of the present number of the *Journal*).

*Mr Spence* considered this case as interesting and instructive; for pericœcal abscess was one of those diseases where the diagnosis is by no means always so distinct as it is sometimes stated to be in books. The circumstance of a *post-mortem* examination having been obtained, imparted additional value to the observations. It seemed clear, that nine months before a portion of omentum had come down; the cœcum had also in all probability been dragged down; and the parts about the deep ring and inguinal canal had been distended, and thus probably the position of the subsequent purulent collection determined. *Mr Spence* had lately seen, with Dr Keiller, a case of pericœcal abscess, forming a tumour, which occupied the position of a hernia, but in it the diagnosis had been attended with no great difficulty, as no true hernial symptoms were present; there were, indeed, nausea and vomiting; but these manifestly depended upon the general condition of the patient; and there was no constipation. With reference to the characteristic symptoms of hernia, Mr Spence had found that constipation, in the proper sense of the word, was almost invariably present. Occasionally, indeed, especially in femoral hernia, there was a loose stool at first, in consequence of the irritation of the intestine; but as soon as the lower part of the bowel was emptied, constipation set in. As to vomiting, this symptom, especially in the case of old persons, sometimes ceased; and the friends of the patient might urge delay in operating, on the ground that amelioration had taken place. In examining the patient, however, it would be found that he was not getting better; for that the malaise and state of prostration continued. The safe rule seemed to be, that in such cases of irreducible tumours in the groin, even in the absence of pain and vomiting, the surgeon should operate. If the tumour were not a hernia, but an abscess, the best thing that could be done was to open it cautiously. Mr Spence had seen cases where the abscess had opened spontaneously, where ulceration of the gut and fœcal fistula had resulted, and where a cure was not effected for months.

### VIII. CASE OF CROUP IN THE ADULT.

*Dr Bruce* read a case of croup in the adult, which will be published in an early number of this Journal.

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## REPORT OF GENERAL BOARD OF LUNACY FOR SCOTLAND.

The Third Annual Report of the General Board of Lunacy for Scotland, dated 30th January 1861, has just been issued. The following is an abstract of the principal features of the Report:—

After noticing that, notwithstanding the uncertainty in which the question of further legislation still remains, several of the District Boards are now taking active steps for the erection of asylums, the Report proceeds:—

### NUMBER AND DISTRIBUTION OF THE INSANE IN SCOTLAND.

We have again to note a considerable increase in the number of pauper lunatics. On 1st January 1858, they were returned to us as amounting to 4737; on 1st January 1859, to 4980; and on 1st January 1860, to 5226. There was thus an increase of 243 in 1858, and of 246 in 1859.

The distribution of the insane in Scotland on 1st January 1860 was as follows:—

In public and district asylums there were 2632 patients, being an increase, since 1st January 1859, of 136. Of these patients, 1355 were males, and 1277 females; 773 were supported by private funds, and 1859 by parochial rates. At 1st January 1859, the numbers supported by private funds and parochial rates were respectively 809 and 1687. It thus appears, that during 1859 a decrease of 36 had taken place in the number of private patients, and an increase of 172 in that of paupers. The number of patients in private asylums or licensed houses amounted to 852, being an increase of 31 in 1859. Of these patients, 349 were males, and 503 females; 196 were supported by private funds, and 656 by parochial rates. On 1st January 1859, the numbers supported by private funds and parochial rates were respectively 200 and 621. It thus appears, that during 1859 a decrease of 4 had taken place in the number of private patients, and an increase of 35 in that of paupers. The insane in poorhouses amounted to 866, being an increase of 69 during the year. Of these patients, 349 were males, and 517 females; all of whom, with the exception of 2 females, were maintained by their parishes. The pauper lunatics placed as single patients amounted to 1847, being a decrease of 30 since the returns of the previous year. These patients, comprising 828 males and 1019 females, were disposed of in the following manner:—682 males and 750 females were living with relatives; 134 males and 220 females were placed with strangers; and 12 males and 49 females were living alone.

As stated in our former Reports, we have no reliable means of ascertaining the number of private patients living singly; but in the course of our investigations we became cognisant of the existence of 1887, comprising 1041 males and

846 females. Although we had reason to think that these numbers were considerably within the reality, we adopted them in our Second Report, and we continue them in the estimates of this year, as we are without the means of determining the changes which have occurred from the addition of new cases, or the subtraction of old ones by recovery or death.

Of 8084 insane persons in Scotland, 2858 were supported by private funds, and 5226 by parochial rates. On 1st January 1859, the corresponding numbers were 2898 and 4980. The increase in the numbers of the insane thus appears to be restricted to pauper lunatics. It is found, however, in all the different classes of establishments; in public and district asylums, in private asylums, and in lunatic wards of poorhouses. On the other hand, the number of private patients has diminished. The result is probably in great measure due to the transfer of a number of the indigent insane from the class of private patients to that of paupers.

### DIFFICULTY IN ADMINISTERING THE LUNACY ACT.

The Report next notices at some length the difficulty of determining what constitutes a lunatic in the eye of the law, as continuing to prevent uniformity in the manner of administering the Act in different counties. The efforts of the Board to require the removal of pauper lunatics to asylums are occasionally defeated by the decision of the Sheriff, that the patient, though undoubtedly of unsound mind, is not a lunatic in the statutory sense, from the medical certificates containing no statement of facts showing him to be dangerous either to himself or others. The Board are of opinion, that all dubiety on this point would at once be removed by making the definition of lunacy include any person certified by two competent medical men to be "a lunatic, an insane person, an idiot, or a person of unsound mind."

Experience has convinced the Board that it will be impossible to introduce a uniform procedure as regards orders, so long as the Sheriff seeks, in his judicial capacity, to determine whether the medical certificates afford sufficient evidence of the existence of insanity. The Board therefore suggest, that the Sheriff should, as a matter of course, grant his order for the admission of patients on the simple certificates of two qualified medical men, that the patient is insane, and a proper person to be detained in an asylum; and that it should be the duty of the Commissioners to examine the certificates, and to call for their amendment when defective; or to require the discharge of the patient when the evidence of insanity appeared imperfect, and could not be substantiated. It must frequently happen that stringent statutory directions as to the disposal of lunatics cannot be adhered to without great risk of accidents, and we are therefore of opinion that it is not advisable to administer the law of lunacy as stringently, or with as little latitude, as if it formed part of the criminal code. A public Board might safely be entrusted with the power to modify the schedules necessary for the disposal of the insane, provided that no effect should be given to such modification until it was approved of by the Home Secretary. In Scotland the general procedure in regard to lunatics approaches much too closely to that of the criminal law; and the necessity for obtaining the Sheriff's order for placing a patient in an asylum, frequently exercises a powerful influence in deterring friends from having recourse to this measure. Many persons, too, who would voluntarily place themselves under treatment, are prevented from taking this course by their unwillingness to submit to the present forms.

### PROCEEDINGS OF DISTRICT BOARDS.

We are glad to report that several of the District Boards are now taking decided steps for carrying into effect the requirements of the statute for the erection of asylums. The causes of delay, which were ascribed to uncertainty regarding fresh lunacy legislation, still exist; but the fact is beginning to be recognised that no amount of legislation will remove the necessity for providing asylums.

The following table shows the number of pauper lunatics chargeable to each district, who were under treatment in asylums on the 1st day of January 1858, 1859, and 1860; and also the numbers in each district for which the reports of the Visiting Commissioners led us to believe asylum accommodation should be provided. This estimate, however, will probably require modification, especially in the Highland districts, should the statutory restrictions for the reception of more than one lunatic into a private house without a license be modified or repealed.

| District. | Numbers already in Asylums and Lunatic Wards of Poorhouses. | | | Estimated Asylum Accommodation required. |
|---|---|---|---|---|
| | On 1st January 1858. | On 1st January 1859. | On 1st January 1860. | |
| Aberdeen, . . . . | 209 | 224 | 270 | 299 |
| Argyle, . . . . . | 64 | 84 | 94 | 148 |
| Ayr, . . . . . . | 93 | 94 | 133 | 180 |
| Banff, . . . . . | 23 | 27 | 35 | 79 |
| Bute, . . . . . | 10 | 12 | 16 | 25 |
| Caithness, . . . . . | 17 | 18 | 26 | 62 |
| Dumfries, . . . . . | 130 | 159 | 185 | 230 |
| Edinburgh, . . . . | 525 | 514 | 531 | 599 |
| Elgin, . . . . . | 34 | 43 | 42 | 63 |
| Fife, . . . . . . | 180 | 203 | 208 | 243 |
| Forfar, . . . . . | 296 | 305 | 323 | 340 |
| Glasgow, . . . . . | 554 | 549 | 585 | 620 |
| Haddington, . . . . | 51 | 50 | 55 | 88 |
| Inverness, . . . . . | 134 | 147 | 168 | 339 |
| Kincardine, . . . . | 44 | 47 | 52 | 66 |
| Orkney, . . . . . | 17 | 21 | 24 | 35 |
| Perth, . . . . . | 175 | 191 | 203 | 323 |
| Renfrew, . . . . . | 153 | 169 | 175 | 193 |
| Roxburgh, . . . . | 76 | 64 | 66 | 123 |
| Shetland, . . . . . | 18 | 17 | 19 | 30 |
| Stirling, . . . . . | 150 | 163 | 169 | 268 |
| Totals, . . . . | 2953 | 3101 | 3379 | 4353 |

EXPENDITURE FOR PAUPER LUNATICS.

The following table shows the expenditure for pauper lunatics in Scotland in 1858 and 1859:—

| | 1858. | | | 1859. | | |
|---|---|---|---|---|---|---|
| Expenditure for patients in public asylums, . . . . . . | L.50,425 | 13 | 10 | L.40,393 | 3 | 9½ |
| Expenditure for patients in private asylums, . . . . . | | | | 14,381 | 4 | 2 |
| Expenditure for patients in poorhouses, | 10,877 | 14 | 2½ | 13,552 | 9 | 3 |
| Expenditure for patients in private houses, | 14,230 | 4 | 3 | 15,054 | 16 | 2 |
| Certificates, transport of lunatics, etc., | 5,118 | 9 | 8½ | 4,763 | 11 | 10½ |
| | L.80,652 | 2 | 0 | L.88,145 | 5 | 3 |

There was thus in 1859 an increased expenditure of L.7493, 3s. 3d.; resulting partly from the increased number of pauper lunatics, and partly due to the higher average cost of their maintenance. The average daily rate in asylums, poorhouses, and private houses, in 1858 and 1859, was as follows:—

| | 1858. | | 1859. | |
|---|---|---|---|---|
| | *s.* | *d.* | *s.* | *d.* |
| In Public Asylums, . . . | 1 | 2½ | 1 | 3 |
| ,, Private Asylums, . . . | | | 1 | 3¾ |
| ,, Poorhouses, . . . . | 0 | 9 | 0 | 10¾ |
| ,, Private Houses, . . . | 0 | 5 | 0 | 5½ |
| General average, . . | 0 | 9½ | 0 | 10¾ |

The expenditure for 1859 includes the contributions by relatives towards the maintenance of such patients as were placed in asylums, but their amount was only L.1877, 10s. 6½d. The assistance afforded to those who remained at home can be estimated only by calculating how far the average parochial allowance of 5½d. a day falls below the average actual cost of their maintenance; but we are without data for any calculations of this kind.

The average daily expenditure for each pauper lunatic is 10¾d. for the whole of Scotland; but it varies greatly in different districts, being, for instance, in Dumbartonshire double what it is in the counties of Sutherland and Caithness.

The Report then gives a series of tabular statements of the expenditure for pauper lunatics, with the view of showing that the expenditure was least in those parishes which trusted entirely to asylums, and was greatest in those which made the greatest use of poorhouses.

### STATISTICS OF INSANITY.

The total number of orders granted by Sheriffs of counties for the admission of patients into asylums since the Lunacy Act came into operation is as follows:—

| | 1858. | 1859. | 1860. |
|---|---|---|---|
| For private patients, . . | 455 | 1718 | 431 |
| ,, pauper patients, . . | 1346 | | 1211 |

The results both of 1858 and 1859 tend to show that females are more liable to lunacy than males. The intimations of pauper lunatics by the inspectors of poor in these years were as follows:—

| | Males. | Females. | Total. |
|---|---|---|---|
| 1858, . . . | 578 | 819 | 1397 |
| 1859, . . . | 558 | 657 | 1215 |
| | 1136 | 1476 | 2612 |

The results of these two years show that 1306 persons are annually placed on the roll as pauper lunatics; but it is probable that this number will be found, by future experience, to be above the usual average, as the returns of 1858 and 1859 include a considerable number of old cases which should have been previously reported, but which were only brought to light by the visits of the Commissioners.

A series of tables are then given, which show that 1335 new patients were admitted into asylums in 1860; of whom 20 were readmitted in the course of the year, 289 were discharged recovered, 85 were discharged not recovered, 83 died during the year, and 898 remained in the asylums at the close of the year.

### CHRONIC CASES OUGHT NOT TO BE ACCUMULATED IN ASYLUMS.

We will not delay expressing our opinion that systematic measures should be adopted for preventing the accumulation of chronic cases in asylums. This, if allowed to go on unchecked, experience shows, will necessitate either the refusal of recent cases, or the undue extension of the asylum buildings. There can be no doubt that the chief object of an asylum should be the treatment of the insane with a view to their restoration to sanity. A most important secondary object is certainly the proper care of incurable patients, more especially of those who for various reasons cannot be restored to liberty; but we should, nevertheless, guard against the permanent detention of such as, under certain precautions, might be allowed to be at large. The accumulation of large numbers of the insane under the same roof is, in many respects, a convenient arrangement; but it is unnatural and artificial, and is distasteful, and probably also hurtful, to many patients. At all events, the detention of the insane in these establishments should be a matter of thoughtful consideration in each individual case; and the question which the superintendent should seek to determine, is not whether the insanity of a patient is such as to warrant his continued detention, but whether it is such as to render his discharge impossible or impolitic. We are strongly impressed with the conviction, that it is highly desirable to bring the propriety of detaining patients in asylums periodically under review; and we are therefore of opinion, that the authority for their detention should be periodically renewed. The law of Holland authorizes the detention of a patient at first only for a period not exceeding three months, and afterwards from year to year, on satisfactory evidence that adequate reasons exist, beyond mere unsoundness of mind, for warranting prolonged detention.

### CONDITION OF THE INSANE.

*Single Patients.*—During the year 1860 the applications for exemption from removal of pauper lunatics to asylums amounted to 160; of which, after due inquiry, 136 were granted. Applications for the transfer of 26 pauper patients from asylums to private houses were likewise agreed to. The numbers thus transferred do not indicate the total removals of unrecovered pauper lunatics, as 112 were first removed from our jurisdiction by the withdrawal of their names from the poor-roll, and were then disposed of by their relatives as private patients. The condition of the single patients in the counties of Argyle, Ayr, Banff, Berwick, Caithness, Dumbarton, Dumfries, Elgin, Forfar, Haddington, Kirkcudbright, Linlithgow, Peebles, Perth, Renfrew, Ross and Cromarty, Stirling, Sutherland, Wigton, and the Western Islands, has been investigated during the past year. The total number of pauper patients seen and reported on was 1356, of whom 1265 were seen, and 91 reported on without being seen, from absence from home or other causes. During these visitations, 517 private patients, chiefly in indigent circumstances, were likewise seen, and 346 reported on. These inspections involve a great expenditure of time; but we consider them of great value, and are satisfied that they are gradually improving the condition of the patients.

*Public Asylums.*—Under this head the Report gives detailed notices of the public asylums in Scotland, which show that generally they are in a satisfactory condition, but crowded; 250 applications for the admission of patients into public asylums having been refused in the course of the year.

*Licensed Houses.*—The licensed houses had refused 213 applications for admission during the year. The average mortality in licensed houses is below that of public asylums. This fact is probably dependent on the large proportion of chronic cases admitted. Our attention, however, has been specially directed to the high mortality which occurred in Millholm House. An inquiry which we instituted regarding its cause, leads us to believe that it is mainly attributable to the constitution of the patients having been enfeebled by long-continued disease, under unfavourable circumstances, previous to admission.

*Idiot Schools.*—According to estimates, founded on the results of our own visitations, there are 2236 idiots and imbeciles in Scotland, of whom about 270 were ascertained to be below fifteen years of age. Of these, it may be calculated that about one-half are improvable, and would derive benefit from special training in idiot schools. But it is abundantly evident, from general vital statistics, that the number of idiots under fifteen years of age must, in proportion to the others, be considerably higher than is here stated. There is a great want in Scotland of an establishment specially adapted for the reception of young idiots, where they would be removed from the neglect and cruel usage they too frequently experience at home, or from the contaminating influence of association with the adult lunatics in asylums, whose eccentricities and degraded habits they are prone to copy, and from whom they frequently experience maltreatment.

*Poorhouses.*—When compared with the mortality in licensed houses, that in the lunatic wards of poorhouses is found equally excessive. Thus, while, on an average of three years, 29 deaths occurred in the former class of establishments, in a resident population of 356·5, 57 deaths occurred in the latter class, in an average population of 324·5. The female mortality, also, is higher in poorhouses than in public asylums and licensed houses, although in a less degree.

It is of consequence to determine whether the excess of deaths in poorhouses is dependent on the condition of the patients when admitted, or is the result of the treatment to which they have been subjected after admission. It is, perhaps, impossible to bring forward sufficient proof to determine positively the truth of either of these propositions; but there are, nevertheless, very strong grounds for believing that the greater mortality in poorhouses is due to that last mentioned. In the first place, the excess of deaths is principally among the males, for whose proper treatment the deficiencies are greatest; and secondly, the mortality is greatly beyond that of the asylums, when estimated on the average numbers resident, although the difference is rather the other way when it is calculated on the admissions. We are clearly of opinion, that lunatic wards of poorhouses should be closed, and that the districts in which they are situated should be called on to provide fit and proper accommodation for their pauper lunatics. We are not, however, prepared to recommend that the appropriation of wards in poorhouses for the reception and treatment of selected cases should be discontinued; of such, for instance, as are certified to be incurable, and incapable of deriving benefit from the appliances and resources of an asylum. On the contrary, as we have stated in our former Reports, we consider the accommodation which some poorhouses afford as sufficiently appropriate, and the spirit displayed by the parochial boards as sufficiently liberal to warrant the reception of patients of this class.

### DANGEROUS LUNATICS.

During the year, 44 persons were arrested by the police, and, after trial, sent to asylums, as dangerous lunatics. Of these, 2 belonged to Argyle, 1 to Berwick, 3 to Dumfries, 6 to Edinburgh, 2 to Haddington, 6 to Inverness, 17 to Lanark, 1 to Perth, 3 to Roxburgh, 1 to Stirling, and 2 to Wigtown.

We have pointed out in former Reports, that the Act does not call on the Sheriffs to decern against the person or parish liable for the maintenance of dangerous lunatics, but that it was, nevertheless, the custom in some counties for him to do so. A recent decision in the Court of Session, to the effect that the Sheriff is not authorized by the provisions of the 85th section of the Lunacy Act (under which dangerous lunatics are brought before him) to decern against the party liable for the maintenance of the patient, but that his duty is only to take measures for his safe custody, settles the law so far, but leaves the question of liability as doubtful as ever. Very serious evils flow from this uncertainty, involving much expenditure to the parishes, and occasionally prolonged confinement in jail to the lunatic.

### DIPSOMANIACS.

There is a class of establishments to which we consider it our duty to direct attention, as, although frequently containing persons who are detained against their will, they are not subject to any official supervision. We refer to houses for the treatment of dipsomaniacs. The best known of these is the House of

Refuge in Edinburgh. It contains a considerable number of patients of this class, about twelve of whom were stated to us to be compulsorily detained.

There is no doubt that houses for the reclamation of dipsomaniacs are calculated to be of much service to the community; but we are of opinion that they should be placed under official supervision, and that certain forms for the reception and detention of the inmates should be rigidly observed. We would accordingly suggest that such houses should be legally recognised, and that when persons are placed in them, or in ordinary asylums, under certificates of insanity, bearing that the malady is due to the abuse of intoxicating liquors, it should be lawful for the superintendent to detain such persons for a period not exceeding three months from the date of admission, even although all symptoms of mental aberration had in the meantime disappeared. And further, that it should be lawful for the superintendent to prolong detention for a period not exceeding a year, whenever the patient had already been the inmate of an establishment for dipsomaniacs, or of an ordinary lunatic asylum on account of intemperance; provided that no such person should be detained for more than three months without the written concurrence of the Board, and that such concurrence should be renewed at the expiry of every three months.

And we would further suggest, that when any person had obtained a medical certificate that detention in a special establishment, or in an ordinary asylum, would be conducive to the welfare of such person, by depriving him of the opportunity of indulging to excess in intoxicating liquors, it should be lawful to receive him into such establishment or asylum, on his signing a declaration that he was desirous voluntarily to submit himself to the discipline of the house; and that thereafter such patient should be detained, subject to the same regulations as if he had been received on the Sheriff's order, granted on two medical certificates of insanity.

### CRIMINAL LUNATICS.

The number of criminal lunatics in the General Prison on 1st January 1861 was 31, viz., 22 males and 9 females. Those in ordinary asylums comprised 5 male patients, whose maintenance was defrayed either from private funds or by their parishes.

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## QUARTERLY RETURN OF BIRTHS, DEATHS, AND MARRIAGES IN SCOTLAND.

### BIRTHS.

25,425 births were registered in Scotland during the first quarter of the year 1861, being 1712 fewer births than during the corresponding quarter of the previous year, and the lowest number of births recorded for the first quarter since 1856. Allowing for increase of population, this would indicate an annual proportion of 319 births in every ten thousand persons—a proportion below the average of the corresponding quarter of the five previous years, which was at the rate of 337 births in every ten thousand persons. The mean birth-rate of the first quarter in England is 340 births in every ten thousand persons of the population—a slightly higher proportion than that of Scotland.

The proportion of births in the town and country districts varied considerably. Thus, in the 126 town districts, which include all the larger towns, and nearly an exact half of the population as at 1851, the number of births was 14,381; while in the rural districts, numbering an equal population in 1851, the births only amounted to 11,044. The births in the town districts were therefore in the annual proportion of 346 births in every ten thousand persons of the estimated population, or one birth in every 28 persons, while in the country districts the proportion was 290 births in every ten thousand, or one birth to every 34 persons.

Of the 25,425 births, 22,958 were legitimate, and 2467 illegitimate, which gives the proportion of 9·7 per cent. of the births as illegitimate, or one illegitimate in every 10·3 of the births.

Unlike all the Continental States, it would seem now to be established that the proportion of illegitimate births is less in the town than in the country districts of Scotland. Thus, while in the 125 town districts only 8·7 per cent. of the births were illegitimate, or one illegitimate in every 11·4 births; in the 871 rural districts, 10·9 per cent. of the births were illegitimate, or one illegitimate in every 9·1 births.

Of the 25,425 births, 12,995 were male, and 12,430 female, which gives the proportion of 104·5 males to every 100 females at birth, which seems to be nearly the average proportion of the sexes at birth in Great Britain.

Of the births, 8536 were registered during January, 7868 during February, and 9021 during March; or about 275 births daily during January, 281 daily during February, and 291 daily during March.

### DEATHS.

17,929 deaths were registered in Scotland during the first quarter of the year 1861, being 2265 fewer than during the corresponding quarter of the previous year. The deaths were, therefore, in the annual proportion of 225 deaths in every ten thousand of the estimated population, or one death in every 44 persons, which is below the average death-rate of the corresponding quarter in the six previous years, which was at the rate of 232 deaths in every ten thousand persons. It is also greatly below the average death-rate in England for the corresponding quarter, a ten years' mean showing that in England 246 deaths occur in every ten thousand persons during the first quarter of the year.

The deaths in the town districts very much exceeded those in the rural districts. Thus, in the 126 town districts, which contained nearly a half of the population as at 1851, the deaths numbered 11,255; while in the 881 rural districts, which contained an equal population in 1851, the deaths only amounted to 5674. In other words, the death-rate in the towns was in the annual proportion of 271 deaths in every ten thousand persons of the estimated population; whereas in the rural districts, only 142 persons died in each ten thousand of their estimated population. This striking fact shows how many noxious agencies must be at work in the town districts, where the proportional mortality is very nearly double that of the rural districts.

Of the 17,929 deaths, 7016 were registered in January, 5188 in February, and 5725 in March; thus indicating 226 deaths daily in Scotland during January, 185 daily during February, and 185 daily during March.

### INCREASE OF THE POPULATION.

As the births amounted to 25,425, and the deaths to 17,929, the natural increase of the population amounted to 7496 persons. From a return furnished to the Registrar-General by the Emigration Commissioners, it appears that, during the quarter, 16,537 emigrants left the ports of Great Britain and Ireland; and of these 667 were ascertained to be of Scottish origin. If to this number 22 be added, as the proportion of those whose origin was not ascertained, the number of Scottish emigrants would amount to 889, which, deducted from the excess of births over deaths, would show that the actual increase of the population during the quarter, irrespective of the immigrants, whose numbers cannot be ascertained, amounted to 6607 persons.

### MARRIAGES.

4619 marriages were registered in Scotland during the first quarter of 1861, being 156 fewer marriages than during the corresponding quarter of 1860.

This indicates an annual proportion of 58 marriages in every ten thousand persons of the estimated population—a proportion below the average marriage-rate of the corresponding quarter in former years, which was in Scotland at the rate of 59 marriages in every ten thousand persons, and much below the average of England, which, for the corresponding quarter, averages 70 marriages in every ten thousand persons.

Of the 4619 marriages, 2753 were contracted in the 126 town districts, and 1866 in the 881 country districts, being at the rate of 63 marriages in the town districts in every ten thousand persons, but only 49 marriages in the rural districts in an equal population.

### HEALTH OF THE POPULATION.

A very large amount of sickness has prevailed generally over Scotland, more especially during the earlier months of the quarter. After the severe frosts gave way, and the milder weather set in, influenza and bronchitic attacks, in many instances attended with febricula, were very general. Notwithstanding this, the mortality was low, the very severe weather at the close of 1860 having apparently weeded the population of a very large proportion of its weaker members, who continued to drop off during January, and thus swelled the mortality of that month far beyond that of February, which in general is our most fatal month.

As usually happens during the first quarter of the year, a great number of aged persons were cut off. Three are mentioned in the Registrars' Notes as of the respective patriarchal ages of 100, 102, and 103 years; and during the same period, one died in Edinburgh, and one in Paisley, above 100. But the most aged person was an unmarried female who died at Perth, and her age, as ascertained from the Perth register, was 105 years 139 days—the eldest of a family of 20 by the same father and mother.

In the northern divisions of Scotland, hooping-cough appears to have been the prevalent epidemic, and to have largely increased the mortality. In the north-eastern division, sore-throat, diphtheria, and scarlatina more especially prevailed. In none of the other divisions did any specific epidemic seem to take the lead; but in one place small-pox, in another measles, in a third typhus fever, and in a fourth diphtheria, or scarlet fever, or hooping-cough, were the prevalent maladies, and the more especial causes of the mortality. The Registrars' Notes mention at least one striking instance of the connection between the spread and fatality of typhus under the influence of neglect of the most simple sanitary arrangements. In one case five members of one family were laid up with that disease, the cottage which they occupied being at same time dwelling-house and cow-house, both classes of inmates entering by the same door.

### WEATHER.

The intensely cold weather which set in about Christmas, and, after a partial intermission, recurred during the earlier part of January, exhibited the usual effect of low temperature in this country, in largely increasing the number of deaths. In general, February proves our coldest month, and, as a natural consequence, a greater number of persons die during that month in Scotland than any other; but the past January proved a marked exception to this, inasmuch as it was 3°·2 colder than February, and hence the greatest mortality occurred during that month; for, while 226 deaths occurred daily in Scotland during January, only 185 deaths occurred daily during February. The months of February and March, however, have both been above the average temperature; and, as this increase of temperature has been attended with a greater fall of rain, and a greater amount of humidity than usual, while there has been a diminution in the proportion of the cold, arid east winds, and a preponderance of high winds from the west and south-west, there has been a free circulation of air, and no such stagnation of the atmosphere as would allow the excessive moisture to become hurtful to the living inhabitants. Hence the mortality during February and March has been below the average of former years; and if the weather continues favourable, as it appears to be giving every indication of doing, the present year may prove, like the census year 1851, a year of low mortality, and of prosperity and heavy crops to the farmer.

The mean barometric pressure, corrected and reduced to the sea level, was 30·038 inches in January; 29·681 inches in February; and 29·507 inches in March. The mean temperature of the quarter was 38°·9, being 1°·6 above the mean of the corresponding quarter of the six previous years. The mean temperature of January was 36°·2; of February, 39°·5; and of March, 41°·1. The mean degree of humidity was 90 in January; 88 in February; and 86 in March; being in every month fully 2 greater than usual. The mean depth of rain and melted snow was 3·09 inches during January, 3·32 inches during February, and 5·10 inches during March; thus amounting to 11·51 inches during the quarter, and constituting the very large excess of 3·15 inches above the average fall of former years. Winds with an easterly point blew 7 days in January, 8 days in February, and 4 days only in March. Winds with a westerly point blew on the average 15 days in January, 13 days in February, and 22 days in March.

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## ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

On the evening of the 20th May, the President and Fellows of the Royal College of Physicians held the first of three conversaziones in Physicians' Hall, at which a lecture was delivered by Professor Simpson, "On the Chief Modern Advances in Practical Midwifery." The audience was exclusively a professional one; and among those who accepted the invitation of the College, were Dr Douglas Maclagan, P.R.C.S.; Surgeon-Major Anderson, Dr W. F. A. Browne, Dr Gairdner, Dr Andrew Wood, Mr Benjamin Bell, Professor Balfour, Dr John Struthers, Dr Handyside, Dr Newbigging, Dr Lockwood, 2d Dragoons; Dr Bruce, Deputy-Inspector-General; Dr Jamieson, late of Aberdeen; Mr Archibald Dickson, Dr R. Bruce, Dr T. Balfour, Mr Edwards, Dr Murray Thomson, Dr Cappie, Dr William Scott, Dr Wilson, Dr Scoresby Jackson, Dr Gibson, Dr Sibbald, Dr Sanderson, Musselburgh; Dr Craig, Ratho; Dr Lucas, Dalkeith; Dr Thomson, Dalkeith; Dr Wilson, Glasgow; Dr Watson, Tranent; Dr A. Balfour, Portobello; Dr Kennedy, Leven; Dr Howden, Haddington, etc., etc. Dr Alexander Wood, the President of the College, in opening the proceedings, stated that the object of this series of lectures was more strictly professional than those which had been formerly delivered in the College, and that, accordingly, invitations had been issued to the great mass of medical practitioners in Edinburgh and the surrounding districts. Professor Simpson then delivered his lecture on "The Chief Modern Advances in Practical Midwifery." The lecture, which lasted for about two hours, was listened to with great interest, and embraced various departments of the subject of obstetrics, in every one of which the learned Professor showed that very great advances had been made since the year 1818, from which he commenced his historical narrative. Dr Simpson clearly showed, that not only had the alleviation of suffering been great by the new methods introduced during the period embraced in his lecture, but that, as demonstrated by a series of statistical tables, to which he referred, a great saving of life, both to the mother and child, had been effected. At the conclusion of his lecture, Dr Simpson briefly alluded to the introduction of chloroform, and combated in a most logical and humorous way the so-called religious objections to its employment. The President of the College, in the name of the assembled guests, returned thanks to Dr Simpson for his able lecture, which, he stated, he was sure would not only interest all medical practitioners, from the clear demonstration it gave of the advances of that department of medical practice, but would prove of the greatest use to those obstetrical practitioners who had had the benefit of hearing it.

## PRELIMINARY EXAMINATION PAPERS FOR THE DOUBLE QUALIFICATION CONFERRED BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH.

### EXAMINATION PAPER—LITERARY DEPARTMENT.

*N.B.*—A perfectly correct version or translation of any one of the following passages, or such translation of any two of them as, after deducting errors, shall make up together the number 50, will be accepted as a "pass." Those will be entitled to higher distinction whose numbers in the whole paper amount to 100. Those whose numbers rise to 150, will be entitled to Honours.

I. Eumenes, having understood these things, called his soldiers together, and first, he gives them thanks, that nobody had been found who preferred the prospect of a bloody reward to the obligation of an oath; then, he cunningly subjoins, that he had forged these letters, in order that he might try their affections.

I. Quum Eumenes cognosco hic, convoco miles, et primo ago is gratia, quod nemo invenio qui antepono spes cruentus praemium fides sacramentum; tum, callide subnecto, sui confingo hic epistola, ut experior animus.

Value = 50.

Translate into English the following passage in a speech of Marius to the Roman people:—

II. Quoniam vestra consilia accusantur qui mihi summum honorem et maximum negotium imposuistis, etiam atque etiam reputate, num id poenitendum sit. Non possum, fidei causâ, imagines, neque triumphos aut consulatus majorum meorum ostentare; at, si res postulet, hastas, vexillum, phaleras, alia militaria dona; praeterea cicatrices adverso corpore. Hae sunt meae imagines, haec nobilitas, non hereditate relicta, ut illa illis, sed quae ego plurimis laboribus et periculis quaesivi. Non sunt composita verba mea: parum id facio; ipsa se virtus satis ostendit: illis artificio opus est uti turpia facta oratione tegant. Neque litteras Graecas didici; parum placebat eas discere, quippe quae ad virtutem doctoribus nihil profuerunt. At illa, multo optima reipublicae, doctus sum; hostem ferire, praesidia agitare; nihil metuere, nisi turpem famam; hiemem et aestatem juxta pati; humi requiescere; eodem tempore inopiam et laborem tolerare.—*Sall. Jugurth.*

Value = 50.

To be turned into Latin:—

III. Sertorius had a white hind, of surpassing beauty, which was of great use to him in his campaigns in Spain. He had accustomed it to hear his call, and to follow him in his walks. He had persuaded everybody that it was a gift of Diana, and that he was admonished by it what was necessary to be done. If he had a mind for any thing harder than usual, he gave out that he was advised by the hind, and the soldiers instantly and readily obeyed.

Value = 50.

IV. Hannibal, ut nec hostes elici amplius ad pugnam vidit, nec per castra eorum perrumpi ad Capuam posse, ne suos quoque commeatus intercluderent novi consules, abscedere irrito incepto et movere a Capua statuit castra. Multa secum quònam inde ire pergeret volventi, subiit animum impetus caput ipsum belli Romam petendi; cujus rei semper cupitae praetermissam occasionem post Cannensem pugnam et alii vulgo fremebant et ipse non dissimulabat; necopinato pavore ac tumultu non esse desperandum aliquam partem urbis occupari posse: et, si Roma in discrimine esset, Capuam extemplo omissuros aut ambo imperatores Romanos aut alterum ex iis.

Value = 50.

## EXAMINATION PAPER—SCIENTIFIC DEPARTMENT.

### ARITHMETIC, MATHEMATICS, AND NATURAL PHILOSOPHY.

[*In conformity with the published Regulations, the number affixed to each of the questions in this department indicates the value that will be attached to a full and correct answer. The entire sum of the numbers amounts to* 1000, *and candidates are required to solve questions to the value of at least* 80 *in each of two of the three sections (A., B., and C.) into which the questions are divided, and of* 200 *in all, to entitle them to pass. Those who attain a value of* 500, *or upwards, will be entitled to certificates of Honour.*]

A. 1. If a cwt. of sugar cost L.3, 10s., what is the price per lb.? [35.]

2. Find the simple interest on L.517, for 2 years, at L.3¾ per cent. per annum. [50.]

3. Reduce $\frac{1}{80}$ to a decimal [20], and find the product of .815 by .044. [20.]

4. Water weighs 1000 ounces the cubic foot. How many cubic inches does a three ounce bottle contain? [40.]

5. A man can lift 10 lbs. 10 feet in a second. How many days will it take him, working 10 hours a-day, to lift 10 tons of coals from a pit half-a-mile deep? [50.]

B. 6. If one side of a triangle be produced, the exterior angle is equal to the sum of the two interior opposite angles; and all the angles of a triangle are together equal to two right angles. [40.]

7. The straight line drawn at right angles to the diameter of a circle from its extremity touches the circle; and from the same point no other straight line can be drawn which does not cut the circle. [60.]

8. Divide $a^4 + a^2b^2 + b^4$ by $a^2 + ab + b^2$. [50.]

9. Solve the following equations:—

(1.) $x + \frac{x}{2} - \frac{x}{3} = 4x - 17.$ [30.]

(2.) $3\,\frac{x-1}{2} - 5\,\frac{6-x}{4} = \frac{x+7}{3} + \frac{1}{2}\left(x - \frac{x}{2}\right).$ [40.]

(3.) $\surd(30+x) = \surd(10+x) + 2.$ [50.]

(4.) $\left.\begin{aligned} 3x - 2y &= 7 \\ 8x + 2y &= 48 \end{aligned}\right\}.$ [50.]

10. A merchant has spirit worth 9s. per gallon; and other spirit worth 13s. In what proportion must he mix 40 gallons, so that he may sell them at 10s. per gallon? [80.]

C. 11. Explain the phenomena of attraction in general, and of gravitation in particular. [30.] What is the *law* of attraction of the planets towards each other and towards the sun? [30.] and what prevents this attraction bringing the bodies together? [30.]

12. Describe the balance and the steelyard. [30.] If the arms of a balance are unequal, show how it may still be employed for weighing. [30.] Determine the law of graduation of the steelyard. [30.]

13. If a cork be thrust into a bottle full to the brim, the bottle will hold less fluid than before. State whether or not the base of the bottle will sustain less pressure than before; and why? [30.] If the whole of the fluid, except that which is in contact with the sides and base of the vessel, were to become frozen; what would be the immediate effect from the alteration of volume [30]; and what the change of *pressure* when equilibrium should be restored?—the bottle being always full to the brim. [30.]

14. Describe the human eye. [40.] How do the rays fall on the retina in the case of short-sighted persons? [20.] How are the evils due to dispersion provided against? [25.] How are they remedied in the object glass of a telescope? [30.]

## THE ATTORNEY-GENERAL *VERSUS* THE ROYAL COLLEGE OF PHYSICIANS.

### VICE-CHANCELLORS' COURT.

(*Before* Vice-Chancellor Sir WM. PAGE WOOD.)

APRIL 30TH—MAY 1ST.

This case came before the Court upon demurrer to an information filed by the Attorney-General, at the relation of the Society of Apothecaries as plaintiffs, for the purpose of restraining the College of Physicians from creating a new body of Licentiates in Medicine according to certain resolutions lately passed and promulgated by the College.

It was stated by the information that the defendants, the Royal College of Physicians, were incorporated in 1519 by royal charter, whereby the king's physicians and other persons therein named, and all other men of the same faculty of and in the City of London, were erected into a corporation; and a provision was contained in the charter to the effect that no one in the City, or within seven miles in circuit around the same, should practise the said faculty unless he had been admitted to do so by the president and community, or their successors, by letters under their common seal, under the penalty of 100 shillings for each month in which, not having been admitted, he should have exercised the same faculty; and it gave them supervision over all physicians within the City and circuit of seven miles. The charter was ratified and confirmed by an Act of Parliament passed in 1522, and by another passed in 1540. Under this charter and these Acts of Parliament the Royal College of Physicians had up to the present time exercised the powers granted to them, and their practice had been to grant licenses for practising the faculty of physic, either within London and the circuit of seven miles round, when such persons were properly called licentiates, or throughout England, when they were properly called extra-licentiates. Ever since their constitution, and up to the present time, the College of Physicians had considered and acted on the principle that the business of compounding and supplying medicines for gain was the business, not of a physician, but of an apothecary or druggist; and they had refused to admit to the practice of physic any person who compounded and supplied medicines for gain. By the bye-laws of the College it was declared that no person should be admitted into the order of licentiates unless he had completed his twenty-sixth year and had taken the degree of M.D.; and that if he should happen to have been a member of the College of Surgeons or of the Society of Apothecaries, he should be required to adduce evidence, previous to his admission into the order, of having renounced his connection with those societies. The Apothecaries' Society was incorporated by royal charter in the fifteenth year of King James I., with certain privileges as to the exercise by them of the mystery and faculty of an apothecary. The effect of this incorporation was greatly to raise the character and position of apothecaries; and this circumstance, combined with the inability of the physicians to provide their patients with the drugs prescribed to them, gradually conferred upon the apothecaries the right not only of vending but of prescribing medicines, that right having been, as was alleged in the information, successfully vindicated in the reign of Queen Anne by an apothecary named Rose. In 1815 an Act was passed establishing compulsory examination as a qualification for practising as an apothecary, and imposing penalties upon all persons practising as apothecaries without first obtaining the certificate of the society. The effect of this Act was to vest exclusively in the Apothecaries' Society, and persons duly qualified by them, the right of supplying medicines in medical cases; and it was enacted (section 20) that if any person, except such as were then actually practising as such, should, after the 1st of August 1815, act or practise as an apothecary in any part of England or Wales, without having obtained such certificate as aforesaid, every person so offending should, for every such offence, forfeit and pay the sum of L.20. The Medical Act, which was passed in 1858 (21 and 22 Vict., c. 90), established a General Medical Council, consisting of representatives from the various medical bodies of Great Britain and Ireland, and contained provisions for a registry of medical men of various classes and denominations. The information proceeded to state that the defendants had recently conceived the scheme of erecting the present licentiates into members of the College, and of establishing a new class of practitioners, to be licensed by the defendants, and intended that such new class should commence practice at an earlier age than, and be inferior in qualifications and attainments to, the present class of fellows and licentiates of the College, and that they intended to grant to such new class licenses purporting to allow them to act as apothecaries, or to compound and supply for gain the medicines supplied by them. On the 8th of August 1859, the defendants, in pursuance of this scheme, passed bye-laws regulating the election of fellows of the College, and declaring, amongst other things, that no one should be eligible as a fellow who was engaged in trade, or who practised pharmacy, or made any engagement with a chemist or any other person for the supply of medicine from which profit is derived, or who practised physic or surgery in partnership, by deed or otherwise, so long as that partnership should continue; and in similar terms that no fellow of the College should be engaged in trade, etc. And with respect to their members they also ordained that licentiates should be styled members of the College, and should be alone eligible to fellowships (the practice of pharmacy being in the case of these members also excluded). At the same meeting at which these bye-laws were passed, the following resolutions, which gave rise to the present contest, were also passed:—

"That any person who shall have satisfied the College touching the sufficiency of his acquirements in general science and literature, and given proof under examination of his proficiency in the science and practice of medicine and midwifery, and who shall have complied with such other regulations as are or shall be required by the bye-laws of the corporation, may receive a license to practise physic. That no person so licensed be empowered to vend, compound, or dispense any medicines, except for patients under his own medical care. That every candidate be required to furnish proof that he has attained the age of twenty-one years. That the preceding resolutions be submitted to the Medical Council, with an expression of the desire of this College to render those resolutions available for co-operation with the College of Surgeons in the licensing of general practitioners."

On the 18th of April 1860, it was resolved:—

"That this College will grant licenses to practise physic to persons, *who shall not be restricted by any bye-law from supplying medicines to their patients*, and who shall be entitled to register under the Medical Act as licentiates of the Royal College of Physicians of London."

In the month of December a paper was circulated, embodying the above resolutions, and containing these bye-laws, amongst others:—

"Licentiates of this College shall not compound or dispense medicines, except for patients under their own care.

"No licentiate of the College shall assume the title of Doctor of Medicine, or use any other name, title, designation, or distinction, implying that he is a graduate in medicine of a university, unless he be a graduate in medicine of a university.

"No licentiate of this College shall by virtue of his license represent himself as being a fellow or member of a College of Physicians.

"Each licentiate shall have the following form of license given to him, under the seal of the College, signed by the President and by the Examiners:—I, A. B., Doctor of Medicine, President of the Royal College of Physicians of London, with the consent of the fellows of the same College, have, under the authority given to us by royal charter, granted to C. D., who has satisfied the College of his proficiency in the science and practice of medicine and midwifery, our license, under the said charter, to practise physic so long as he shall continue to obey the statutes and bye-laws of the College relating to licentiates."

By the same paper it was provided that every candidate should be of the full age of twenty-one years, and a course of examination was prescribed closely resembling that adopted by the Society of Apothecaries. In consequence of this, some correspondence took place between the Society of Apothecaries and the College of Physicians, in which the former explained that the class of practitioners which the latter proposed to establish would be a different class of practitioners from any which they had ever licensed under their charter, and from any known to the law, and would be, to some extent, a class of apothecaries; but having failed to induce them to abandon their design, they caused the present information and bill to be filed, stating all the above-mentioned matters, and charging that such design was contrary to the law, was beyond the power and authority of the College of Physicians, and an invasion of the rights and jurisdiction of the Society of Apothecaries, and that it was a matter of great importance to the public that they should not issue licenses by which an apparent authority would be given to licentiates to enter on a course of practice which would render them liable to the penalties imposed by the Act of 1815. The information and bill then proceeded to pray for a declaration that the defendants could not lawfully issue any license which purported to authorize the licentiate to compound and supply for gain the medicines he prescribed, or in any other way to exercise the calling of an apothecary, or which purported to establish any new order of medical practitioners, and that the defendants may be restrained by injunction from issuing any such license, and from doing any other act with the purpose or intention of giving such authority or apparent authority. To this the defendants demurred, and the demurrer now came on for argument. It is necessary to mention that for the purposes of the demurrer all the statements alleged in the information and bill must be taken to be true; and the only question that could be argued in the present stage of the proceedings was whether, assuming all the facts to be proved as stated, the plaintiffs were entitled to the relief sought by the prayer.

Mr ROUNDELL PALMER, Q.C., Mr CLEASBY, Q.C. (of the common law bar), and Mr OSBORNE, in support of the demurrer, urged that this was an attempt on the part of the relators to repeal by a side wind the liberal provisions of the Legislature in favour of the general body of the medical profession, and to create an unauthorized and illegal monopoly in the Apothecaries' Society. There was no jurisdiction in a Court of Equity to interfere in the matter. If the defendants thought that their privileges were being invaded, let them put in force the penalties provided by the Apothecaries' Act of 1815, against practising as an apothecary without qualification. But, in truth, the Act complained of was not illegal, and was entirely within the powers and privileges of the College of Physicians. So far from abandoning those privileges, the College of Physicians had established dispensaries out of their funds all over the metropolis. Upon these grounds, as supported by various authorities (to which they referred), it was submitted that the demurrer must be allowed.

The ATTORNEY-GENERAL and Mr HOBHOUSE, for the plaintiffs, contended that the act contemplated by the defendants, and impeached by the bill, was not only an invasion of the apothecaries' Act of 1815, by which physicians were distinctly restrained from interfering with the privileges thereby conferred upon the apothecaries, but was also a fraud upon the Medical Act of 1858, by creating a new body of practitioners of a hybrid order, who were neither physicians nor apothecaries. The Attorney-General then proceeded to comment at some length upon the authorities which had been cited on the other side, and referred to the recent decision of the Judicial Committee of the Privy Council as to the ordinance of the Scotch University Commission enabling the degree of "Master in Surgery" to be conferred by some of the Scotch universities. In that case he had had the honour to sit as assessor, and had had the advantage of the very able argument of his learned friend, Mr Palmer. That argument, which was directed against the proposed degree, was unsuccessful; but the decision could hardly help the defendants in this case, for the *ratio decidendi* was that it was perfectly competent for the universities to confer such a degree, the existence of which had been contemplated by the Medical Act of 1858, and was expressly mentioned in the schedule to that Act. In conclusion, he would submit that it was most essential to the public welfare, to the rank and dignity of the College of Physicians, to the recognised authority of the Society of Apothecaries, and to the maintenance in their full force of the provisions of the Legislature, that this unauthorized act of the College should be restrained,—an act which was *ultra vires*, exceeding their charter and their own statutes, and went far to contravene that status which they had acquired and enjoyed with honour, distinction, and service to the commonwealth for upwards of three centuries.

The VICE-CHANCELLOR, without waiting for a reply, said that the demurrer must be allowed. The College of Physicians had been in the habit, under their charter, of granting licenses to persons to practise physic so long as they obeyed the bye-laws of the College. Those licenses had been issued from a time as far back as the reign of Henry VIII. down to the year 1858, and by the bye-laws which had been in force during that time the licentiates were restricted from administering drugs; an ancient statute of the College having declared that if any licentiate sought his livelihood in the trade of a drug-seller, etc., he should have fallen away from the body of licentiates. In order to supply the want created by these bye-laws which prevented physicians from supplying their patients with drugs, another body of practitioners was called into existence, called apothecaries, who were incorporated by charter of King James I., and whose business it was to dispense drugs, and who in course of time came to be consulted instead of the physicians, and became the medical advisers, in fact, of a very large proportion of the people. And in the course of time another well-known body of practitioners arose, who were called surgeons, and who from time to time themselves obtained charters from the Crown; and the object of the Medical Act of 1858 was to secure to the public practitioners in each of these departments, and to secure persons duly qualified according to the several branches of the profession in the practice of those branches. Upon this the Attorney-General had argued that the Legislature, in speaking of licentiates of the College of Physicians, intended licentiates as they had hitherto existed, and that to place those persons on the registry as licentiates who were and ought to be called apothecaries was a fraud upon the statute, inasmuch as the College had, by its own bye-law expressly prohibiting its members from taking upon themselves to vend and dispense drugs, defined the meaning of the word "licentiate;" and the Legislature, therefore, in using the word, had used it in the sense in which it had hitherto been used by the College of Physicians itself; in fact, that the word had, by the adoption of the Legislature, acquired a fixed meaning; and for the College of Physicians now to create another body of men who should not be subject to the bye-laws, and yet should go by the same name of licentiates, was a fraud upon the statute of such a nature as to justify the intervention of this Court. But in order to support this argument it was necessary to assume that the status of licentiates was definitely fixed, and must since the Medical Act of 1858 be taken to be, as it were, stereotyped and for ever bound by the former conditions and restrictions; and to say that those conditions and restrictions whereby formerly the licentiates of the College were prevented from dispensing drugs could not now be relaxed. The conditions imposed by the bye-laws of the College might be divided into conditions precedent as to the capacity and education of the candidate, and conditions subsequent as to the observance of the bye-laws after the issue of the license, one of which was, that if he sought his livelihood in the trade of a drug-seller, or by selling any wares whatsoever, he should be deemed to have fallen away from the body of licentiates. There was not the slightest evidence on the face of the Act of any intention to interfere with any of the bye-laws, or to show that the corporate body were not to have the same power of altering them after the Act as they had before, and of modifying the qualifications required for the admission of candidates with the control of the General Council. The only point on which the Legislature interfered in this respect was that particular theories, such as homœopathy, mesmerism, and the like, were not to act as disqualifications. But, assuming that the College was precluded by the Act from relaxing its conditions subsequently, he was by no means sure that this would be sufficient to sustain the information; he thought that even then the Court would not have jurisdiction to restrain the issue of those licenses; however invalid they might be, they must be allowed to go for what they were worth until their value was tested in a court of law. The real question was, how far the design of the defendants was a fraud upon the Legislature, and how far they were precluded from altering their own bye-laws. Their original charter comprised the whole domain of physic and surgery. The effect was to place all medical science under the control of the College of Physicians; and, down to the charter of James I., no one could have disputed the right of the College to deal with the question of selling medicines, and to revoke or alter their own bye-laws on the subject in any way they pleased. The very existence of such a bye-law implied that it was customary for physicians to deal in drugs, and, except the bye-law, it did not appear that there was anything to prevent them; and it was probably the bye-law itself which had called the Apothecaries' Society into existence. No doubt considerable inconvenience was occasioned to the public from the restriction, and this gave rise to the Apothecaries' Society and their incorporation by the charter of James I. The apothecaries, from the very humble position of grocers and drug-sellers, gradually acquired greater skill in the administration and knowledge of the properties of drugs, and were accordingly incorporated by charter, with certain privileges to themselves, and restrictions against others; but it could not be contended that this charter interfered with the privileges of the College of Physicians. From the time of Henry VIII. down to 1815, it was perfectly clear that they might have relaxed any of their bye-laws, including that which restricted the sale of drugs. Then it was contended that the Act of 1815 did not by its saving clause (section 29, stated above) preserve to the College the right of granting licenses divested of the restriction contained in the bye-laws. To say the least of it, that construction was far too doubtful to justify this Court in restraining them in the *bonâ fide* exercise of their functions; nor was it clear that this Court was the medium through which a solution of the question could be properly obtained. There was no express repeal of the privileges of the College of Physicians; on the contrary, there was a saving clause, and unless the 20th section of the Act was absolutely inconsistent with their preservation, he could not come to the conclusion that the privileges vested in the College were abrogated by it. Again, it had been contended that as the Legislature must have been aware of the previous status of licentiates, the creation of a new body of licentiates would be a fraud upon the Medical Act. But it was clear that this power existed before the passing of the Act. All that he could assume the Legislature to have known was the state of the law at the time, by which the bodies who had made the bye-laws were capable of altering them; and there was not a scintilla of evidence on the face of the Act showing an intention to deprive any of these medical bodies of the powers they possessed before, or to contract the limits of their charters. The preamble of the Act was quite in accordance with this view of the case. The only grievance alleged was, that the defendants were creating a new body of licentiates inferior in qualification to the former, and who would be to some extent a class of apothecaries. Assuming that the plaintiffs would have a right of action against these new licentiates, still all that the College of Physicians had done was to say they would not degrade them for selling drugs, and the worst that could happen to the newly created class of licentiates would be that they would have to obtain certificates from the Apothecaries' Society. With regard to the public injury arising from the harm done to these young men by inducing them to incur penalties under the Apothecaries' Act, under the impression that these licenses enabled them to practise as apothecaries, the answer to that was *volenti non fit injuria.* The medical profession were generally well informed as to the state of the law, and they must be considered to have notice of all the risks they ran. The conclusion his Honour arrived at was, that there was originally full power in the College of Physicians to alter their bye-laws from time to time; that anterior to 1815 there was not a shadow of a pretence for saying they could not alter them. He did not think that that Act prevented them from altering them; and clearly the Act of 1858 did not interfere with the mode in which licenses were to be granted. On all these grounds the demurrer would be allowed, and it was not a case in which any good could be done by giving leave to amend.

## COURT OF QUEEN'S BENCH.

### THE M.D. OF THE COLLEGE OF PHYSICIANS OF IRELAND.

(The Queen at the prosecution of J. Barker *v.* W. E. Steele.)

Mr William Smith applied, on the part of Dr James Barker, jun., that a mandamus do issue, to be directed to Dr William E. Steele, as Registrar of the Branch Council of Ireland under the Medical Act, commanding him to restore the entry in the Local Register for Ireland, of the name and qualifications thereon of the said James Barker to the same state as such entry was in originally, and also to insert thereon the letters M.D., which letters had been struck out from the Register without any sufficient authority for so doing; or to enter upon such Register, as part of the medical qualification of the said James Barker, after the words "a licentiate" of the King's and Queen's College of Physicians in Ireland, the words "as Doctor of Medicine." He applied for a mandamus upon two grounds:—the first was, irrespective of the general merits of the application, that the Council had no authority to alter the registry except upon appeal, with notice duly given to the party whose rights were to be affected. No such notice was given to Dr Barker; but the main and real question would be as to whether a licentiate of the College of Physicians, fully qualified, was not entitled to have attached to his name the distinctive title of M.D., or Doctor of Medicine, so as not to be confounded with the mere practitioner in medicine. Counsel referred to the 40th Geo. III., chap. 84, to show a legislative recognition of the College of Physicians, to grant the title now sought to be replaced upon the registry.

Some discussion took place with the members of the Court as to the construction of the Medical Act of 1858, but

Their Lordships granted the conditional order for a mandamus, to have the important questions raised fully discussed.

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